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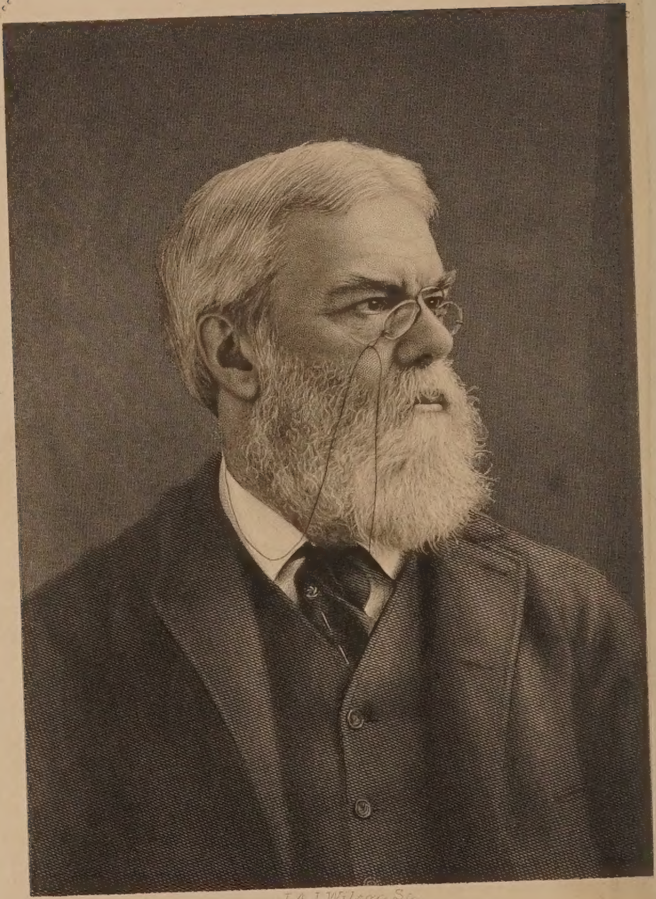

J. A. J. Wilcox, Sc.

Justin Winsor

Winsor's History of America

ABORIGINAL AMERICA

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To

CHARLES WILLIAM ELIOT, LL. D.

President of Harvard University.

Dear Eliot:

Forty years ago, you and I, having made preparation together, entered college on the same day. We later found different spheres in the world; and you came back to Cambridge in due time to assume your high office. Twelve years ago, sought by you, I likewise came, to discharge a duty under you.

You took me away from many cares, and transferred me to the more congenial service of the University. The change has conduced to the progress of those studies in which I hardly remember to have had a lack of interest.

So I owe much to you; and it is not, I trust, surprising that I desire to connect, in this work, your name with that of your

Obliged friend,

Justin Winsor

Cambridge, 1889.

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[*The portrait of Justin Winsor, the frontispiece to this volume, is reproduced from a photograph by Pach Brothers in 1888. The cut on the title represents a mask, which forms the centre of the Mexican Calendar Stone, as engraved in D. Wilson's Prehistoric Man, i, 333, from a cast now in the Collection of the Society of Antiquaries in Scotland.*]

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INTRODUCTION.

By the Editor.

PART I. AMERICANA IN LIBRARIES AND BIBLIOGRAPHIES.

HARRISSE, in the Introduction of his *Bibliotheca Americana Vetustissima*, enumerates and characterizes many of the bibliographies of Americana, beginning with the chapter, "De Scriptoribus rerum Americanarum," in the *Bibliotheca Classica* of Draudius, in 1622.[1] De Laet, in his *Nieuwe Wereldt* (1625), gives a list of about thirty-seven authorities, which he increased somewhat in later editions.[2] The earliest American catalogue of any moment, however, came from a native Peruvian, Léon y Pinelo, who is usually cited by the latter name only. He had prepared an extensive list; but he published at Madrid, in 1629, a selection of titles only, under the designation of *Epitome de la biblioteca oriental i occidental*,[3] which included manuscripts as well as books. He had exceptional advantages as chronicler of the Indies.

In 1671, in Montanus's *Nieuwe weereld*, and in Ogilby's *America*, about 167 authorities are enumerated.

Sabin[4] refers to Cornelius van Beughem's *Bibliographia Historica*, 1685, published at Amsterdam, as having the titles of books on America.

The earliest exclusively American catalogue is the *Bibliothecæ Americanæ Primordia* of White Kennett,[5] Bishop of Peterborough, published in London in 1713. The arrangement of its sixteen hundred entries is chronological; and it enters under their respective dates the sections of such collections as Hakluyt and Ramusio.[6] It particularly pertains to the English colonies, and more especially to New England, where, in the eighteenth century, three distinctively valuable American libraries are known to have existed, — that of the Mather family, which was in large part destroyed during the battle of Bunker Hill, in 1775; that of Thomas Prince, still in large part existing in the Boston Public Library; and that of Governor Hutchinson, scattered by the mob which attacked his house in Boston in 1765.[7]

In 1716 Lenglet du Fresnoy inserted a brief list (sixty titles) in his *Méthode pour étudier la géographie*. Garcia's *Origen de los Indias de el nuevo mundo*, Madrid, 1729, shows a list of about seventeen hundred authors.[8]

In 1737–1738 Barcia enlarged Pinelo's work, translating all his titles into Spanish, and added numerous other entries which Rich[1] says were "clumsily thrown together."

---

[1] Herrera failed to add a list of authors to the original edition of his *Historia* (1601–1615), but one of about thirty-three entries is found in later editions.

[2] See Vol. IV. p. 417.

[3] Sabin, vol. x. no. 40,053; Carter-Brown, vol. ii. no. 347; Rich (1832), no. 188; Trübner, *Bibliographical Guide to American Literature*, p. viii; Murphy, no. 1,471.

[4] *Dictionary*, vol. ii. no. 5,102.

[5] For an account of a likeness, see J. C. Smith's *British Mezzotint Portraits*, iv. no. 1,694.

[6] The book, of which 250 copies only were printed, is rare, and Quaritch prices it at £3 (Sabin, vol. ix. no. 37,447). It preserves some titles which are not otherwise known; and represents a library which Kennett had gathered for presentation to the Society for the Propagation of the Gospel in Foreign Parts. Rich (*Bibl. Amer. nova*, i. 21) says the index was made by Robert Watts. Although Stevens (*Historical Collections*, i. 142) says that the books were dispersed, the library is still in existence in London, though it lacks many titles given in the printed catalogue, and shows others not in that volume. Cf. *Mass. Hist. Soc. Proc.*, xx. 274; Allibone, ii. 1020; James Jackson's *Bibliographies géographiques* (Paris, 1881), no. 606; Trübner's *Bibliographical Guide*, p. ix; Sabin, *Bibliography of Bibliographies*, p. lxxxvii.

[7] *Memorial History of Boston*, vol. i. pp. xviii, xix; vol. ii. pp. 221, 426.

[8] The original edition was Valencia, 1607. Carter-Brown, vol. ii. no. 52.

Charlevoix prefixed to his *Nouvelle France*, in 1744, a list with useful comments, which the English reader can readily approach in Dr. Shea's translation. A price-list which has been preserved of the sale in Paris in 1764, *Catalogue des livres des ci-devant soi-disans Jésuites du Collége de Clermont*, indicates the lack of competition at that time for those choicer Americana, now so costly.[2] The *Regio patronatu Indiarum* of Frassus (1775) gives about 1505 authorities. There is a chronological catalogue of books issued in the American colonies previous to 1775, prepared by S. F. Haven, Jr., and appended to the edition of Thomas's *History of Printing*, published by the American Antiquarian Society. Though by no means perfect, it is a convenient key to most publications illustrative of American history during the colonial period of the English possessions, and printed in America. Dr. Robertson's *America* (1777) shows only 250 works, and it indicates how far short he was of the present advantages in the study of this subject. Clavigero surpassed all his predecessors in the lists accompanying his *Storia del Messico*, published in 1780, — but the special bibliography of Mexico is examined elsewhere. Equally special, and confined to the English colonies, is the documentary register which Jefferson inserted in his *Notes on Virginia;* but it serves to show how scanty the records were a hundred years ago compared with the calendars of such material now. Meuzel, in 1782, had published enough of his *Bibliotheca Historica* to cover the American field, though he never completed the work as planned.

In 1789 an anonymous *Bibliotheca Americana* of nearly sixteen hundred entries was published in London. It is not of much value. Harrisse and others attribute it to Reid; but by some the author's name is differently given as Homer, Dalrymple, and Long.[3]

An enumeration of the documentary sources (about 152 entries) used by Muñoz in his *Historia del nuevo mundo* (1793) is given in Fustér's *Biblioteca Valenciana* (ii. 202–234) published at Valencia in 1827–1830.[4]

There is in the Library of Congress (Force Collection) a copy of an *Indice de la Coleccion de manuscritos pertinecientes a la historia de las Indias*, by Fraggia, Abella, and others, dated at Madrid, 1799.[5]

In the Sparks collection at Cornell are two other manuscript bibliographies worthy of notice. One is a *Biblioteca Americana*, by Antonio de Alcedo, dated in 1807. Sparks says his copy was made in 1843 from an original which Obadiah Rich had found in Madrid.[6]

Harrisse says that another copy is in the Carter-Brown Library; and he asserts that, excepting some additions of modern American authors, it is not much improved over Barcia's edition of Pinelo. H. H. Bancroft[7] mentions having a third copy, which had formerly belonged to Prescott.

The other manuscript at Cornell is a *Bibliotheca Americana*, prepared in twelve volumes by Arthur Homer, who had intended, but never accomplished, the publication of it. Sparks found it in Sir Thomas Phillipps's library at Middlehill, and caused the copy of it to be made, which is now at Ithaca.[8]

In 1808 Boucher de la Richarderie published at Paris his *Bibliothèque universelle des voyages*,[9] which has in the fifth part a critical list of all voyages to American waters. Harrisse disagrees with Peignot in his favorable estimate of Richarderie, and traces to him the errors of Faribault and later bibliographers.

The *Bibliotheca Hispano-Americana* of Dr. José Mariano Beristain de Souza was published in Mexico in 1816–1821, in three volumes. Quaritch, pricing it at £96 in 1880, calls it the rarest and most valuable of all American bibliographical works. It is a notice of writers who were born, educated, or flourished in Spanish America, and naturally covers much of interest to the historical student. The author did not live to complete it, and his nephew finished it.

---

[1] *Catalogue* (1832), no. 188. Cf. Carter-Brown, vol. iii. no. 568; Trübner, *Bibliographical Guide*, p. ix; Sabin, vol. i. no. 3,349. The portion on America is in vol. ii.

[2] For example, the Champlain of 1613, 3 fr.; that of 1632, 4 fr.; 21 volumes of the *Relations* of the Jesuits, 18 fr.

[3] Sabin, *Dictionary*, vol. ii. no. 5,198; and *Bibliography of Bibliographies*, p. xviii; *Hist. Mag.*, i. 57; and Allibone, ii. 1764, who calls him Reid, an American resident in London, and says he issued the bibliography as preparatory to a history of America. Jackson's *Bibliographies géographiques*, no. 611, and Trübner, *Bibliographical Guide*, p x, call it by the name of the publisher, Debrett.

[4] Jackson's *Bibliographies géographiques*, no 621.

[5] Jackson, *Bibliographies géographiques*, no. 612; *Serapeum* (1845), p. 223; Trübner, *Bibliographica Guide*, p. xxv

[6] Sparks, *Catalogue*, no. 1,635; Jackson's *Bibliographies géographiques*, no. 613; Trübner, p. xxv.

[7] *History of Mexico*, iii. 512, where is an account of Alcedo's historical labors.

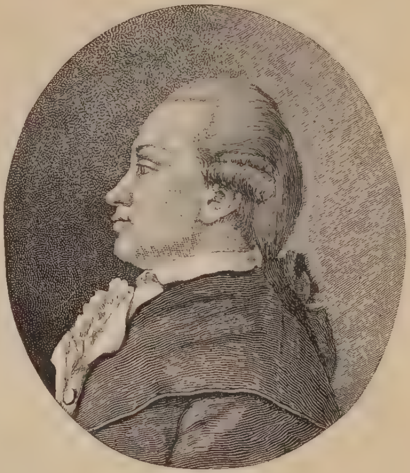
[8] Sparks, *Catalogue*, no. 1,635 *a*, and p. 230.

[9] Sabin, *Bibliography of Bibliographies*, p. xxiv; H. H. Bancroft, *Central America*, ii. 700, 760.

In 1818 Colonel Israel Thorndike, of Boston, bought for $6,500 the American library of Professor Ebeling, of Germany, estimated to contain over thirty-two hundred volumes, besides an extraordinary collection of ten thousand maps.[1] The library was given by the purchaser to Harvard College, and its possession at once put the library of that institution at the head of all libraries in the United States for the illustration of American history. No catalogue of it was ever printed, except as a part of the General Catalogue of the College Library issued in 1830–1834, in five volumes.

Another useful collection of Americana added to the same library was that formed by David B. Warden, for forty years United States Consul at Paris, who printed a catalogue of its twelve hundred volumes at Paris, in 1820, called *Bibliotheca Americo-Septentrionalis.* The collection in 1823 found a purchaser at $5,000, in Mr. Samuel A. Eliot, who gave it to the College.[2]

The Harvard library, however, as well as several of the best collections of Americana in the United States, owes more, perhaps, to Obadiah Rich than to any other. This gentleman, a native of Boston, was born in 1783. He went as consul of the United States to Valencia in 1815, and there began his study of early Spanish-American history, and undertook the gathering of a remarkable collection of books,[3] which he threw open generously, with his own kindly assistance, to every investigator who visited Spain for purposes of study. Here he won the respect of Alexander H. Everett, then American minister to the court of Spain. He captivated Irving by his helpful nature, who says of him:



EBELING.[4]

"Rich was one of the most indefatigable, intelligent, and successful bibliographers in Europe. His house at Madrid was a literary wilderness, abounding with curious works and rare editions.

---

[1] Quincy's *Harvard University*, ii. 413, 596. It is noteworthy, in view of so rich an accession coming from Germany, that Grahame, the historian of our colonial period, says that in 1825 he found the University Library at Göttingen richer in books for his purpose than all the libraries of Britain joined together.

[2] This collection is also embraced in the Catalogue of the College Library already referred to. Mr. Warden began the collection of another library, which he used while writing the American part (10 vols.) of the *Art de vérifier des Dates*, Paris, 1826–1844, and which (1,118 works) was afterward sold to the State Library at Albany for $4,000. Dr. Henry A. Homes, the librarian at Albany, informs me that when arranged it made twenty-one hundred and twenty-three volumes. Warden's *Bibliotheca Americana*, Paris, 1831, reprinted at Paris in 1840, is a catalogue of this collection. Mr. Warden died in 1845, aged 67. Cf. Ludewig in the *Serapeum*, 1845, p. 209; Muller, *Books on America* (1872), no. 1734; Allibone, iii. 2,579; S. G. Goodrich, *Recollections*, ii. 243; Jackson's *Bibl. Géog.*, nos. 617, 618; Trübner, *Bibliographical Guide*, p. xiv. There was a final sale of Mr. Warden's books by Horatio Hill, in New York, in 1846.

[3] This collection was offered to Congress for purchase through Edward Everett in December, 1827. The printed list, with nearly a hundred entries for manuscripts and three hundred and eighty-nine for printed books, covering the years 1506–1825, was printed as Document 37 of the 1st session of the 20th Congress. The sale was not effected. Rich had been able to gather the books at moderate cost because of the troubled political state of the peninsula. Trübner, *Bibliographical Guide*, p. xv.

[4] This portrait of one of the earliest contributors to the bibliography of American history follows an engraving in the *Allgemeine geographische Ephemeriden*, May, 1800, p. 395. Ebeling was born Nov. 20, 1741, and died June 30, 1817, and his own contributions to American History were —

(*a*) *Amerikanische Bibliothek* (Zwei Stücke), Leipzig, 1777.

(*b*) *Erdbescreibung und Geschichte von America*, Hamburg, 1795–1816, in seven vols.; the author's interleaved copy, with manuscript notes, is in Harvard College Library.

(*c*) With Professor Hegewisch, *Americanisches Magazin*, Hamburg, 1797.

There are other likenesses, — one a large lithograph published at Hamburgh; the other a small profile by C. H. Kniep. Both are in the collection of the American Antiquarian Society.

. . . He was withal a man of great truthfulness and simplicity of character, of an amiable and obliging disposition and strict integrity." Similar was the estimation in which he was held by Ticknor, Prescott, George Bancroft, and many others, as Allibone has recorded.[1] In 1828 he removed to London, where he established himself as a bookseller. From this period, as Harrisse [2] fitly says, it was under his influence, acting upon the lovers of books among his compatriots, that the passion for forming collections of books exclusively American grew up.[3] In those days the cost of books now esteemed rare was trifling compared with the prices demanded at present. Rich had a prescience in his calling, and the beginnings of the great libraries of Colonel Aspinwall, Peter Force, James Lenox, and John Carter Brown were made under his fostering eye; which was just as kindly vigilant for Grenville, who was then forming out of the income of his sinecure office the great collection which he gave to the British nation in recompense for his support.[4] In London, watching the book-markets and making his catalogue, Rich continued to live for the rest of his life (he died in February, 1850), except for a period when he was the United States consul at Port Mahon in the Balearic Islands. His bibliographies are still valuable, his annotations in them are trustworthy, and their records are the starting-points of the growth of prices. His issues and reissues of them are somewhat complicated by supplements and combinations, but collectors and bibliographers place them on their shelves in the following order:

1. *A Catalogue of books relating principally to America, arranged under the years in which they were printed* (1500–1700), London, 1832. This included four hundred and eighty-six numbers, those designated by a star without price being understood to be in Colonel Aspinwall's collection. Two small supplements were added to this.
2. *Bibliotheca Americana Nova, printed since* 1700 (to 1800), London, 1835. Two hundred and fifty copies were printed. A supplement appeared in 1841, and this became again a part of his
3. *Bibliotheca Americana Nova*, vol. i. (1701–1800); vol. ii. (1801–1844), which was printed (250 copies) in London in 1846.[5]

It was in 1833 that Colonel Thomas Aspinwall, of Boston, who was for thirty-eight years the American consul at London, printed at Paris a catalogue of his collection of Americana, where seven hundred and seventy-one lots included, beside much that was ordinarily useful, a great number of the rarest of books on American history. Harrisse has called Colonel Aspinwall, not without justice, "a bibliophile of great tact and activity." All but the rarest part of his collection was subsequently burned in 1863, when it had passed into the hands of Mr. Samuel L. M. Barlow,[6] of New York.

M. Ternaux-Compans, who had collected — as Mr. Brevoort thinks [7] — the most extensive library of books on America ever brought together, printed his *Bibliothèque Américaine*[8] in 1837 at Paris. It embraced 1,154 works, arranged chronologically, and all of them of a date before 1700. The titles were abridged, and accompanied by French translations. His annotations were scant; and other students besides Rich have regretted that so learned a man had not more benefited his fellow-students by ampler notes.[9]

Also in 1837 appeared the *Catalogue d'ouvrages sur l'histoire de l'Amérique*, of G. B. Faribault, which was published at Quebec, and was more specially devoted to books on New France.[10]

With the works of Rich and Ternaux the bibliography of Americana may be considered to have acquired a distinct recognition; and the succeeding survey of this field may be more conveniently made if we group the contributors by some broad discriminations of the motives influencing them, though such distinctions sometimes become confluent.

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[1] *Dictionary*, ii. 1788.

[2] *Bibl. Amer. Vet.*, p. xxix.

[3] Dibdin (*Library Companion*, edition 1825, p. 467) refers to this spirit, hoping it would lead to a new edition of White Kennett, perfected to date.

[4] *Bibliotheca Grenvilliana* (London, 1842), now a part of the British Museum.

[5] Sabin, *Bibliog. of Biblio*g., p. cxxi; Allibone, *Dictionary*, p. 1787; Trübner, *Bibliographical Guide to American Literature*, Introduction, p. xiv; Jackson's *Bibl. Géog.*, no. 623, etc.; *Mass. Hist. Soc. Proc.*, i. 395; *Historical Magazine*, iii. 75; *Menzies Catalogue*, no. 1,690; Ternaux-Compans, *Bibliothèque Américaine*, Preface. Puttick and Simpson's *Catalogues*, London, June 25, 1850, and March, April, and May, 1872, note some of his books, besides manuscript bibliographies.

After Mr. Rich's death Mr. Edward G. Allen took the business, and issued various catalogues of books on America in 1857–1871. Cf. Jackson's *Bibliog. Géog.*, nos. 677–682.

[6] See Vol. III. p. 159. The catalogue, being without date, is sometimes given later than 1833. Cf. Jackson, *Bibliog. Géog.*, no. 636; and no. 690. A new *Rough List* of the Barlow Collection was printed in 1885.

[7] *Magazine of American History*, iii. 177. This library was sold in November, 1836, as Raetzel's; the numbers 908–2,117 concerned America. Trübner (*Bibliographical Guide*, p. xviii) says the collection was formed by Ternaux probably with an ultimate view to sale. Ternaux did not die till December, 1864.

[8] Now worth 40 or 50 francs.

[9] Trübner, *Bibliographical Guide*, p. xvi.

[10] See Vol. IV. p. 367. Cf. also Trübner, *Bibliographical Guide*, p. xviii; and Daniel's *Nos Gloires Nationales*, where will be found a portrait of Faribault.

First, as regards what may be termed professional bibliography. One of the earliest workers in the new spirit was a Dresden jurist, Hermann E. Ludewig, who came to the United States in 1844, and prepared an account of the *Literature of American local history*, which was published in 1846. This was followed by a supplement, pertaining wholly to New York State, which appeared in *The Literary World*, February 19, 1848. He had previously published in the *Serapeum* at Leipsic (1845, pp. 209) accounts of American libraries and bibliography, which were the first contributions to this subject.[1] Some years later, in 1858, there was published in London a monograph on *The Literature of the American Aboriginal Linguistics*,[2] which had been undertaken by Mr. Ludewig but had not been carried through the press, when he died, Dec. 12, 1856.[3]

We owe to a Franco-American citizen the most important bibliography which we have respecting the first half century of American history; for the *Bibliotheca Americana Vetustissima* only comes down to 1551 in its chronological arrangement. Mr. Brevoort[4] very properly characterizes it as "a work which lightens the labors of such as have to investigate early American history."[5]

It was under the hospitable roof of Mr. Barlow's library in New York that, "having gloated for years over second-hand compilations," Harrisse says that he found himself "for the first time within reach of the fountain-heads of history." Here he gathered the materials for his *Notes on Columbus*, which were, as he says, like "pencil marks varnished over." These first appeared less perfectly than later, in the *New York Commercial Advertiser*, under the title of "Columbus in a Nut-shell." Mr. Harrisse had also prepared (four copies only printed) for Mr. Barlow in 1864 the *Bibliotheca Barlowiana*, which is a descriptive catalogue of the rarest books in the Barlow-Aspinwall Collection, touching especially the books on Virginian and New England history between 1602 and 1680.

Mr. Barlow now (1864) sumptuously printed the *Notes on Columbus* in a volume (ninety-nine copies) for private distribution. For some reason not apparent, there were expressions in this admirable treatise which offended some; as when, for instance (p. vii), he spoke of being debarred the privileges of a much-vaunted public library, referring to the Astor Library. Similar inadvertences again brought him hostile criticism, when two years later (1866) he printed with considerable typographical luxury his *Bibliotheca Americana Vetustissima*, which was published in New York. It embraces something over three hundred entries.[6] The work is not without errors; and Mr. Henry Stevens, who claims that he was wrongly accused in the book, gave it a bad name in the *London Athenæum* of Oct. 6, 1866, where an unfortunate slip, in making "Ander Schiffahrt"[7] a personage, is unmercifully ridiculed. A committee of the Société de Géographie in Paris, of which M. Ernest Desjardins was spokesman, came to the rescue, and printed a *Rapport sur les deux ouvrages de bibliographie Américaine de M. Henri Harrisse*, Paris, 1867. In this document the claim is unguardedly made that Harrisse's book was the earliest piece of solid erudition which America had produced,—a phrase qualified later as applying to works of American bibliography only. It was pointed out that while for the period of 1492–1551 Rich had given twenty titles, and Ternaux fifty-eight, Harrisse had enumerated three hundred and eight.[8]

Harrisse prepared, while shut up in Paris during the siege of 1870, his *Notes sur la Nouvelle France*, a valuable bibliographical essay referred to elsewhere.[9] He later put in shape the material which he had gathered for a supplemental volume to his *Bibliotheca Americana Vetustissima*, which he called *Additions*,[10] and published it in Paris in 1872. In his introduction to this latter volume he shows how thoroughly he has searched the libraries of Europe for new evidences of interest in America during the first half century after its discovery. He notes the depredations upon the older libraries which have been made in recent years, since the prices for rare Americana have ruled so high. He finds[11] that the Biblioteca Colom bina at Seville, as compared with a catalogue of it made by Ferdinand Columbus himself, has suffered immense losses. "It is curious to notice," he finally says, "how few of the original books relating to the early history of the New World can be found in the public libraries of Europe. There is not a literary institution, however rich and ancient, which in this respect could compare with three or four private libraries in America. The Marciana at Venice is probably the richest. The Trivulgiana at Milan can boast of several great rarities."

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[1] Sabin, x. nos. 42,644–42,645.

[2] Sabin, x. 42,643; Trübner, *Bibliographical Guide*, p. xxi.

[3] *Historical Magazine*, xii. 145; Allibone, ii. p. 1142. The sale of Mr. Ludewig's library (1,380 entries took place in New York in 1858.

[4] In his *Verrazano*, p. 5.

[5] Cf. also D'Avezac in his *Waltzemüller*, p. 4.

[6] Sabin, viii. p. 107; Jackson, *Bibliog. Géog.*, no. 696. The edition was four hundred copies.

[7] An error traced to the proof-reader, it is said in Sabin's *Bibliog. of Bibliog.*, p. lxxiv.

[8] Stevens noticed this defence by reiterating his charges in a note in his *Bibliotheca Historica*, 1870, no. 860.

[9] Vol. IV. p. 366.

[10] Sabin, *Bibliography of Bibliographies*, p. lxxv.

[11] *Grandeur et décadence de la Colombine*, Paris, 1885.

For the third contributor to the recent bibliography of Americana, we must still turn to an adopted citizen, Joseph Sabin, an Englishman by birth. Various publishing enterprises of interest to the historical student are associated with Mr. Sabin's name. He published a quarto series of reprints of early American tracts, eleven in number, and an octavo series, seven in number.[1] He published for several years, beginning in 1869, the *American Bibliopolist*, a record of new books, with literary miscellanies, largely upon Americana. In 1867 he began the publication (five hundred copies) of the most extensive American bibliography yet made, *A Dictionary of books relating to America, from its discovery to the present time.* The author's death, in 1881,[2] left the work somewhat more than half done, and it has been continued since his death by his sons.[3]

In the *Notas para una bibliografia de obras anonimas i seudonimas* of Diego Barros Arana, published at Santiago de Chile in 1882, five hundred and seven books on America (1493–1876), without authors, are traced to their writers.

As a second class of contributors to the bibliographical records of America, we must reckon the students who have gathered libraries for use in pursuing their historical studies. Foremost among such, and entitled to be esteemed a pioneer in the modern spirit of research, is Alexander von Humboldt. He published his *Examen critique de l'histoire de la géographie du nouveau continent*,[4] in five volumes, between 1836 and 1839.[5] "It is," says Brevoort,[6] "a guide which all must consult. With a master hand the author combines and collates all attainable materials, and draws light from sources which *he* first brings to bear in his exhaustive investigations." Harrisse calls it "the greatest monument ever erected to the early history of this continent."

Humboldt's library was bought by Henry Stevens, who printed in 1863, in London, a catalogue of it, showing 11,164 entries; but this was not published till 1870. It included a set of the *Examen critique*, with corrections, and the notes for a new sixth volume.[7] Harrisse, who it is believed contemplated at one time a new edition of this book, alleges that through the remissness of the purchaser of the library the world has lost sight of these precious memorials of Humboldt's unperfected labors. Stevens, in the *London Athenæum*, October, 1866, rebuts the charge.[8]

Of the collection of books and manuscripts formed by Col. Peter Force we have no separate record, apart from their making a portion of the general catalogue of the Library of Congress, the Government having bought the collection in 1867.[9]

The library which Jared Sparks formed during the progress of his historical labors was sold about 1872 to Cornell University, and is now at Ithaca. Mr. Sparks left behind him "imperfect but not unfaithful lists of his books," which, after some supervision by Dr. Cogswell and others, were put in shape for the press by Mr. Charles A. Cutter of the Boston Athenæum, and were printed, in 1871, as *Catalogue of the Library of Jared Sparks*. In the appendix was a list of the historical manuscripts, originals and copies, which are now on deposit in Harvard College Library.[1]

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[1] *J. J. Cooke Catalogue*, no. 2,214; *Griswold Catalogue*, nos. 730, 731. The editions were fifty copies on large paper, two hundred on small. It may be worth record that Gowan, a publisher in New York, was the earliest (1846) to instigate a taste for large paper copies among American collectors, by printing in that style Furman's edition of Denton's *Description of New York*, after the manner of the English purveyors to book-fancying.

[2] See *Proceedings of the Numismatic and Antiquarian Society*, Philadelphia, 1881, p. 28.

[3] Mr. Wilberforce Eames is the new editor. A list of the catalogues prepared by Mr. Sabin is given in his *Bibliography of Bibliographies*, p. cxxiv, etc.

[4] The German translation, *Kritische Untersuchungen*, was made by J. I. Ideler, Berlin, 1852, in 3 vols. It has an index, which the French edition lacks.

[5] Sabin, viii. 539. The edition of Paris, without date, called *Histoire de la géographie du nouveau continent*, is the same, with a new title and an introduction of four pages, La Cosa's map being omitted.

[6] *Verrazano*, p. 4.

[7] In his *Cosmos* Humboldt gives results, which he says are reached in his unpublished sixth volume of the *Examen critique*.

[8] The Humboldt Library was burned in London in June, 1865. Nearly all of the catalogues were destroyed at the same time; but a few large paper copies were saved, which, being perfected with a new title (London, 1878), have since been offered by Stevens for sale. Portions of the introduction to it are also used in an article by Stevens on Humboldt, in the *Journal of Sciences and Arts* January, 1870. Various of Humboldt's manuscripts on American matters are advertised in Stargardt's *Amerika und Orient*, no. 135, p. 3 (Berlin, 1881).

[9] Cf. *Historical Magazine*, vol. ix. no. 335; *Magazine of American History*, vol. ii. pp. 193 221, 565; *Amer. Antiq. Soc. Proc.*, April, 1868. Colonel Force died in January, 1868.

In 1849 Mr. H. R. Schoolcraft[2] printed, at the expense of the United States Government, a *Bibliographical Catalogue of books, etc., in the Indian tongues of the United States*, — a list later reprinted with additions in his *Indian Tribes* (in 1851), vol. iv.[3]

In 1861 Mr. Ephraim George Squier published at New York a monograph on authors who had written in the languages of Central America, enumerating one hundred and ten, with a list of the books and manuscripts on the history, the aborigines, and the antiquities of Central America, borrowed from other sources in part. At the sale of Mr. Squier's library in 1876, the catalogue[1] of which was made by Mr. Sabin, the entire collection of his manuscripts fell, as mentioned elsewhere,[2] into the hands of Mr. Hubert Howe Bancroft of San Francisco.

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[1] Mr. Sparks died March 14, 1866. Tributes were paid to his memory by distinguished associates in the Massachusetts Historical Society (*Proceedings*, ix. 157), and Dr. George E. Ellis reported to them a full and appreciative memoir (*Proceedings*, x. 211). Cf. also *Amer. Antiq. Soc. Proc.*, March, 1866; *Historical Magazine*, May, 1866; Brantz Mayer before the Maryland Historical Society, 1867, etc.

[2] Cf. *Historical Magazine*, vol. ix. p. 137.

[3] The principal interpreter of the Indian languages of the temperate parts of North America has been Dr. J. Hammond Trumbull, of Hartford, for whose labor in the bibliography of the subject see a chapter in vol i. of the *Memorial History of Boston*. There is also a collection edited by him, of books in and upon the Indian languages, in the *Brinley Catalogue*, iii. 123–145. He gave in the *Proceedings* of the American Antiquarian Society, and also separately in 1874, a list of books in the Indian languages, printed at Cambridge and Boston, 1653–1721 (Field, *Indian Bibliography*, no. 1,571). Cf. also Ludewig's *Literature of American Aboriginal Languages*, mentioned on an earlier page. It was edited and corrected by William W. Turner. (Cf. *Pinart-Brasseur Catalogue*, no. 565; Field, *Indian Bibliography*, no. 959).

Icazbalceta published in 1866, at Mexico, a list of the writers on the languages of America; and Romero made a similar enumeration of those of Mexico, in 1862, in the *Boletin de la Sociedad Mexicana de Geografia*, vol. viii. Dr. Daniel G. Brinton has made a good introduction to the literary history of the native Americans in his *Aboriginal American Authors*, published by him at Philadelphia in 1883. For his own linguistic contributions, see Field, *Indian Bibliography*, no. 187, etc. One of the earliest enumerations of linguistic titles can be picked out of the list which Boturini Benaduci, in 1746, appended to his *Idea de una nueva historia general de la America septentrional.*

The most extensive enumeration of the literature of all the North American tongues is doubtless to be the *Bibliography of North American Linguistics*, which is preparing by Mr. James C. Pilling of the Bureau of Ethnology in Washington, and which will be published in due time by that bureau. A preliminary issue (100 copies) for corrections is called *Proof-sheets of a Bibliography of the Indian Languages of North America* (pp. xl, 1135).

The *Bibliotheca Americana* of Leclerc (Paris, 1879) affords many titles to which a preliminary "Table des Divisions" affords an index, and most of them are grouped under the heading "Linguistique," p. 537, etc. The third volume of H. H. Bancroft's *Native Races*, particularly in its notes, is a necessary aid in this study; and a convenient summary of the whole subject will be found in chapter x. of John T. Short's *North Americans of Antiquity*. J. C. E. Buschmann has been an ardent laborer in this field; the bibliographies give his printed works (Field's *Indian Bibliography*, p. 208, etc.), and Stargardt's *Catalogue* (no. 135, p. 6) shows some of his manuscripts. The Comte Hyacinthe de Charencey has for some years, from time to time, printed various minor monographs on these subjects; and in 1883 he collected his views in a volume of *Mélanges de philologie et de paléographie Américaines.*

The Abbé Brasseur de Bourbourg, in his *Bibliothèque Mexico-Guatemalienne* (Leclerc, nos. 81, 1,084), has given for Central America a very excellent list of the works on the linguistics of the natives, which are all contained also in the *Catalogue* of the Pinart-Brasseur sale, which took place in Paris in January and February, 1884. Cf. the paper on Brasseur by Dr. Brinton, in *Lippincott's Magazine*, vol. i.; and the enumeration of his numerous writings in Sabin's *Dictionary*, ii. 7,420; also Leclerc, Field, and Bancroft.

Dr. Félix C. Y. Sobron's *Los Idiomas de la America Latina, — Estudios Biografico-bibliograficos*, published a few years since at Madrid, gives, according to Dr. Brinton, extended notices of several rare volumes; but on the whole the book is neither exhaustive nor very accurate.

Julius Platzmann's *Verzeichniss einer Auswahl Amerikanischer Grammatiken*, etc. (Leipsic, 1876), is a small but excellent list, with proper notes. These bibliographies will show the now numerous works upon the aboriginal tongues, their construction and their fruits.

There are several important series interesting to the student, which are found in the catalogues. Such are the *Bibliothèque linguistique Américaine*, published in seven volumes by Maisonneuve in Paris (Leclerc, no. 2,674); the *Coleccion de linguistica y etnografia Americanas*, or *Bibliothèque de linguistique et d'Ethnographie Américaines*, 1875, etc., edited by A. L. Pinart; the *Library of American Linguistics*, in thirteen volumes, edited by Dr. John G. Shea (Cf. *Brinley Catalogue*, vol. iii. no. 5,631; Field, no. 1,396); *Brinton's Library of Aboriginal American Literature*, published by Dr. D. G. Brinton in Philadelphia; and Brasseur de Bourbourg's *Collection de documents dans les langues indigènes*, Paris, 1861–1864, in four volumes (cf. Field, p. 175).

The earliest work printed exclusively in a native language was the *Catecismo de la Doctrina Cristiana en lengua Timuiquana*, published at Mexico in 1617 (cf. Sabin, vol. xiv. no. 58,580; Finotti, p. 14). This is the statement often made; but Mr. Pilling refers me to references in Icazbalceta's *Zumárraga* (vol. i. p. 290)

Probably the largest collection of books and manuscripts[3] which any American has formed for use in writing is that which belongs to Mr. Bancroft. He is the organizer of an extensive series of books on the antiquities and history of the Pacific coast. To accomplish an examination of the aboriginal and civilized history of so large a field[4] as thoroughly as he has unquestionably made it, within a lifetime, was a bold undertaking, to be carried out in a centre of material rather than of literary enterprise. The task involved the gathering of a library of printed books, at a distance from the purely intellectual activity of the country, and where no other collection of moment existed to supplement it. It required the seeking and making of manuscripts, from the labor of which one might well shrink. It was fortunate that during the gathering of this collection some notable collections — like those of Maximilian,[5] Ramirez, and Squier, not to name others — were opportunely brought to the hammer, a chance by which Mr. Bancroft naturally profited.

Mr. Bancroft had been trained in the business habits of the book trade, in which he had established himself in San Francisco as early as 1856.[6] He was at this time twenty-four years old, having been born of New England stock in Ohio in 1832, and having had already four years residence — since 1852 — in San Francisco as the agent of an eastern bookseller. It was not till 1869 that he set seriously to work on his history, and organized a staff of assistants.[7] They indexed his library, which was now large (12,000 volumes) and was kept on an upper floor of his business quarters, and they classified the references in paper bags.[8] His first idea was to make an encyclopædia of the antiquities and history of the Pacific Coast; and it is on the whole unfortunate that he abandoned the scheme, for his methods were admirably adapted to that end, but of questionable application to a sustained plan of historical treatment. It is the encyclopedic quality of his work, as the user eliminates what he wishes, which makes and will continue to make the books that pass under his name of the first importance to historical students.

In 1875 the first five volumes of the series, denominated by themselves *The Native Races of the Pacific States*, made their appearance. It was

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to an earlier edition of about 1547; and in the same author's *Bibliografia Mexicana* (p. 32), to one of 1553. Molina's *Vocabulario de la lengua Castellana y Mexicana*, placing the Nahuatl and Castilian in connection, was printed at Mexico in 1555. The book is very rare, five or six copies only being known; and Quaritch has priced an imperfect copy at £72 (Quaritch, *Bibliog. Géog. linguistica*, 1879, no. 12,616; Carter-Brown, vol. i. no. 206; *Brinley Catalogue*, vol. iii. no, 5,771). The edition of 1571 is also rare (*Pinart-Brasseur Catalogue*, no. 630; Carter-Brown, vol. i. nos. 285, 286; Quaritch, 1879, no. 12,617). The first edition of Molina's Aztec grammar, *Arte de la lengua Mexicana y Castellana*, was published the same year (1571). Quaritch (1879, no. 12,615) prices this at £52 10*s*. Cf. also Carter-Brown, vol. i. no. 284. One of the chief of the more recent studies of the linguistics of Mexico is Francisco Pimentel's *Cuadro descriptivo y comparativo de las lenguas indigenas de México*, Mexico, 1862–1865; and second edition in 1874–1875.

This subject has other treatment later in the present volume.

[1] It included two thousand and thirty-four items, ninety-four of which were Mr. Squier's own works.

[2] Vol. II. p. 578.

[3] He says that up to 1881 he had gathered 35,000 volumes, at a cost of $300,000, exclusive of time and travelling expenses. His manuscripts embraced 1,200 volumes. The annual growth of his library is still 1,000 volumes.

[4] One twelfth of the earth's surface, as he says.

[5] Cf. account of Maximilian's library in the *Bookworm* (1869), p. 14.

[6] These biographical data are derived from a tract given out by himself which he calls *A brief account of the literary undertakings of Hubert Howe Bancroft* (San Francisco, A. L. Bancroft & Co. [his own business house], 1882, 8vo, pp. 12). Other accounts of his library will be found in the *American Bibliopolist*, vii. 44; and in Apponyi's *Libraries of California*, 1878. Descriptions of the library and of the brick building (built in 1881) which holds it, and of his organized methods, have occasionally appeared in the *Overland Monthly* and in other serial issues of California, as well as in those of the Atlantic cities. He has been free to make public the most which is known regarding his work. He says that the grouping and separating of his material has been done mostly by others, who have also written fully one half of the text of what he does not hesitate to call *The Works of Hubert Howe Bancroft*; and he leaves the reader to derive a correct understanding of the case from his prefaces and illustrative tracts. Cf. J. C. Derby's *Fifty Years among authors, books, and publishers* (New York, 1884), p. 31.

[7] Averaging twelve from that time to this; a hundred persons were tried for every one ultimately retained as a valuable assistant, — is his own statement.

[8] At a cost, as he says, of $80,000 to 1882.

clear that a new force had been brought to bear upon historical research,—the force of organized labor from many hands; and this implied competent administrative direction and ungrudged expenditure of money. The work showed the faults of such a method, in a want of uniform discrimination, and in that promiscuous avidity of search, which marks rather an eagerness to amass than a judgment to select, and give literary perspective. The book, however, was accepted as extremely useful and promising to the future inquirer. Despite a certain callowness of manner, the *Native Races* was extremely creditable, with comparatively little of the patronizing and flippant air which its flattering reception has since begotten in its author or his staff. An unfamiliarity with the amenities of literary life seems unexpectedly to have been more apparent also in his later work.

In April, 1876, Mr. Lewis H. Morgan printed in the *North American Review*, under the title of "Montezuma's Dinner," a paper in which he controverted the views expressed in the *Native Races* regarding the kind of aboriginal civilization belonging to the Mexican and Central American table-lands. A writer of Mr. Morgan's reputation commanded respect in all but Mr. Bancroft, who has been unwise enough to charge him with seeking "to gain notoriety by attacking" his (Mr. B.'s) views or supposed views. He dares also to characterize so well-known an authority as "a person going about from one reviewer to another begging condemnation for my *Native Races*." It was this ungracious tone which produced a divided reception for his new venture. This, after an interval of seven years, began to make its appearance in vol. vi. of the "Works," or vol. i. of the *History of Central America*, appearing in the autumn of 1882.

The changed tone of the new series, its rhetoric, ambitious in parts, but mixed with passages which are often forceful and exact, suggestive of an ill-assorted conjoint production; the interlarding of classic allusions by some retained reviser who served this purpose for one volume at least; a certain cheap reasoning and ranting philosophy, which gives place at times to conceptions of grasp; flippancy and egotism, which induce a patronizing air under the guise of a constrained adulation of others; a want of knowledge on points where the system of indexing employed by his staff had been deficient,—these traits served to separate the criticism of students from the ordinary laudation of such as were dazed by the magnitude of the scheme.

Two reviews challenging his merits on these grounds[1] induced Mr. Bancroft to reply in a tract[2] called *The Early American Chroniclers*. The manner of this rejoinder is more offensive than that of the volumes which it defends; and with bitter language he charges the reviewers with being "men of Morgan," working in concert to prejudice his success.

But the controversy of which record is here made is unworthy of the principal party to it. His important work needs no such adventitious support; and the occasion for it might have been avoided by ordinary prudence. The extent of the library upon which the work[3] is based, and the full citation of the authorities followed in his notes, and the more general enumeration of them in his preliminary lists, make the work pre-eminent for its bibliographical extent, however insufficient, and at times careless, is the bibliographical record.[4]

The library formed by the late Henry C. Murphy of Brooklyn to assist him in his projected history of maritime discovery in America, of which only the chapter on Verrazano[5] has been printed, was the creation of diligent search for many years, part of which was spent in Holland as minister of the United States. The earliest record of it is a *Catalogue of an American library chronologically arranged*, which was

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[1] They appeared in *The Nation* and in the *New York Independent* early in 1883. The first aimed to show that there were substantial grounds for dissent from Mr. Bancroft's views regarding the Aztec civilization. The second ignored that point in controversy, and merely proposed, as was stated, to test the "bibliographic value" which Mr. Bancroft had claimed for his book, and to point out the failures of the index plan and the vicarious system as employed by him.

[2] Seemingly intended to make part of one of the later volumes of his series, to be called *Essays and Miscellanies.*

[3] With a general title (as following his *Native Races*) of *The History of the Pacific States*, we are to have in twenty-eight volumes the history of Central America, Mexico, North Mexico, New Mexico, Arizona, California, Nevada, Utah, Northwest Coast, Oregon, Washington, Idaho, Montana, British Columbia, and Alaska, —to be followed by six volumes of allied subjects, not easily interwoven in the general narrative, making thirty-nine volumes for the entire work. The volumes are now appearing at the rate of three or four a year.

[4] The list which is prefixed to the first volume of the *History of California*, forming vol. xiii. of his Pacific States series, is particularly indicative of the rich stores of his library, and greatly eclipses the previous lists of Mr. A. S. Taylor, which appeared in the *Sacramento Daily Union*, June 25, 1863. and March 13, 1866. Cf. Harrisse, *Bibl. Amer. Vet.*, p. xxxix. A copy of Taylor's pioneer work, with his own corrections. is in Harvard College Library. Mr. Bancroft speaks very ungraciously of it.

[5] See Vol. IV., chap. i. p. 19.

JAMES CARSON BREVOORT.

privately printed in a few copies, about 1850, and showed five hundred and eighty-nine entries between the years 1480 and 1800.[1]

There has been no catalogue printed of the library of Mr. James Carson Brevoort, so well known as a historical student and bibliographer, to whom Mr. Sabin dedicated the first volume of his *Dictionary*. Some of the choicer portions of his collection are understood to have become a part of the Astor Library, of which Mr. Brevoort was for a few years the superintendent, as well as a trustee.[2]

The useful and choice collection of Mr. Charles Deane, of Cambridge, Mass., to which, as the reader will discover, the Editor has often had recourse, has never been catalogued. Mr. Deane has made excellent use of it, as his tracts and papers abundantly show.[3]

A distinct class of helpers in the field of American bibliography has been those gatherers of libraries who are included under the somewhat indefinite term of collectors, — owners of books, but who make no considerable dependence

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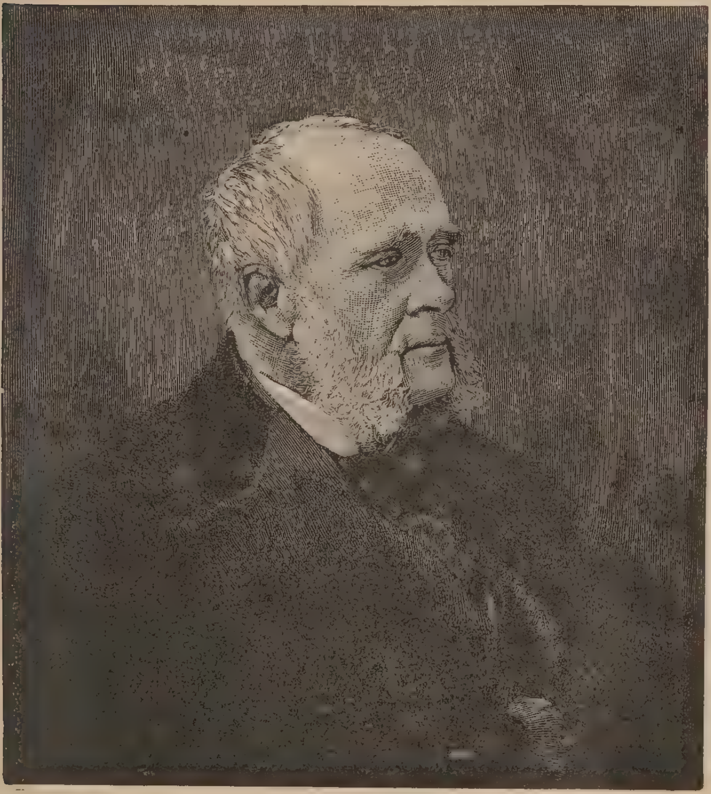
[1] Jackson, *Bibl. Géog.*, no. 639; *Menzies Catalogue*, nos. 1,459, 1,460; Wynne's *Private Libraries of New York*, p. 335. Mr. Murphy died Dec. 1, 1882, aged seventy-two; and his collection, then very much enlarged, was sold in March, 1884. Its *Catalogue*, edited by Mr. John Russell Bartlett, shows one of the richest libraries of Americana which has been given to public sale in America. It is accompanied by a biographical sketch of its collector. Cf. Vol. IV. p. 22.

[2] Cf. Wynne's *Private Libraries of New York*, p. 106. Mr. Brevoort died December 7, 1887.

[3] Cf. Sabin, v. 283; Farnham's *Private Libraries of Boston*.



CHARLES DEANE.

upon them for studies which lead to publication. From such, however, in some instances, bibliography has notably gained, — as in the careful knowledge which Mr. James Lenox sometimes dispensed to scholars either in privately printed issues or in the pages of periodicals.

Harrisse in 1866 pointed to five Americana libraries in the United States as surpassing all of their kind in Europe, — the Carter-Brown, Barlow, Force, Murphy, and Lenox collections. Of the Barlow, Force (now in the Library of Congress), and Murphy collections mention has already been made.

The Lenox Library is no longer private, having been given to a board of trustees by Mr. Lenox previous to his death,[1] and handsomely housed, by whom it is held for a restricted public use, when fully catalogued and arranged. Its character, as containing only rare or unusual books, will necessarily withdraw it from the use of all but scholars engaged in recondite studies. It is very rich in other directions than American history; but in this department the partial access which Harrisse had to it while in Mr. Lenox's house led him to infer that it would hold the first rank. The wealth of its alcoves, with their twenty-eight thousand volumes, is becoming known gradually in a series of bibliographical monographs, printed as contributions to its catalogue, of which six have thus far appeared, some of them clearly and mainly the work of Mr. Lenox himself.

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[1] February, 1880, aged eighty years. His father was Robert Lenox, a Scotchman, who began business in New York in 1783, and retired in 1812 with a large fortune, including a farm of thirty acres, worth then about $6,000, and to-day $10,000,000, — if such figures can be made accurate. Cf. also Charles Deane in *Amer. Antiq. Soc. Proc.*, April, 1880. Henry Stevens's *Recoll. of Lenox* is conspicuous for what it does not reveal.

Of these only three have illustrated American history in any degree, — those devoted to the voyages of Hulsius and Thévenot, and to the Jesuit Relations (Canada).[1]

The only rival of the Lenox is the library of the late John Carter Brown, of Providence, gathered largely under the supervision of John Russell Bartlett; and since Mr. Brown's death it has been more particularly under the same oversight.[2] It differs from the Lenox Library in that it is exclusively American, or nearly so,[3] and still more in that we have access to a thorough catalogue of its resources, made by Mr. Bartlett himself, and sumptuously printed.[4] It was originally issued as *Bibliotheca Americana: A Catalogue of books relating to North and South America in the Library of John Carter Brown of Providence, with notes by John Russell Bartlett*, in three volumes, — vol. i., 1493–1600, in 1865 (302 entries); vol. ii., 1601–1700, in 1866 (1,160 entries); vol. iii., 1701–1800, in two parts, in 1870–1871 (4,173 entries).

In 1875 vol. i. was reprinted with fuller titles, covering the years 1482[5]–1601, with 600 entries, doubling the extent of that portion.[6] Numerous fac-similes of titles and maps add much to its value. A second and similarly extended edition of vol. ii. (1600–1700) was printed in 1882, showing 1,642 entries. The *Carter-Brown Catalogue*, as it is ordinarily cited, is the most extensive printed list of all Americana previous to 1800, more especially anterior to 1700, which now exists.[7]

Of the other important American catalogues, the first place is to be assigned to that of the collection formed at Hartford by Mr. George Brinley, the sale of which since his death[8] has been undertaken under the direction of Dr. J. Hammond Trumbull,[9] who has prepared the catalogue, and who claims — not without warrant — that it embraces "a greater number of volumes remarkable for their rarity, value, and interest to special collectors and to book-lovers in general, than were ever before brought together in an American sale-room."[10]

The library of William Menzies, of New York, was sold in 1875, from a catalogue made by Joseph Sabin.[11] The library of Edward A. Crowninshield, of Boston, was catalogued in Boston in 1859, but withdrawn from public sale, and sold to Henry Stevens, who took a portion of it to London. It was not large, — the catalogue shows less than 1,200 titles, — and was not exclusively American; but it was rich in some of the rarest of such books, particularly in regard to the English Colonies.[1]

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[1] The Lenox Library is now under the direction of the distinguished American historical student, Dr. George H. Moore, so long in charge of the New York Historical Society's library. Cf. an account of Dr. Moore by Howard Crosby in the *Historical Magazine*, vol. xvii. (January, 1870). The officer in immediate charge of the library is Dr. S. Austin Allibone, well known for his *Dictionary of Authors*.

[2] Mr. Bartlett was early in life a dealer in books in New York; and the Americana catalogues of Bartlett and Welford, forty years ago, were among the best of dealers' lists. Jackson's *Bibl. Géog.*, no. 641.

[3] The field of Americana before 1800 has been so nearly exhausted in its composition, that recent purchases have been made in other departments, particularly of costly books on the fine arts.

[4] Cf. Vol. III. p. 380.

[5] Because Greenland in the map of the Ptolemy of this year is laid down. The slightest reference to America in books of the sixteenth century have entitled them to admission.

[6] The book purports to have been printed in one hundred copies; but not more than half that number, it is said, have been distributed. Some copies have a title reading, *Bibliographical notices of rare and curious books relating to America, printed in the fifteenth and sixteenth centuries, in the library of the late John Carter Brown, by John Russell Bartlett*.

[7] Sir Arthur Helps, in referring to the assistance he had got from books sent to him from America, and from this library in particular, says: "As far as I have been able to judge, the American collectors of books are exceedingly liberal and courteous in the use of them, and seem really to understand what the object should be in forming a great library." *Spanish Conquest*, American edition, p. 122.

[8] Cf. *Amer. Antiq. Soc. Proc.*, October, 1875.

[9] Dr. Trumbull himself has been a keen collector of books on American history, particularly in illustration of his special study of aboriginal linguistics; while his influence has not been unfelt in the forming of the Watkinson Library, and of that of the Connecticut Historical Society, both at Hartford.

[10] The first sale — there are to be four — took place in March, 1878, and illustrated a new device in testamentary bequests. Mr. Brinley devised to certain libraries the sum of several thousand dollars each, to be used to their credit for purchases made at the public sale of his books. The result was a competition that carried the aggregate of the sales, it is computed, as much beyond the sum which might otherwise have been obtained, as was the amount devised, — thus impairing in no degree the estate for the heirs, and securing credit for public bequests. The scheme has been followed in the sale of the library (the third part of which was Americana, largely from the Menzies library) of the late J. J. Cooke, of Providence, with an equivalent appreciation of the prices of the books. It is a question if the interests of the libraries benefited are advanced by such artificial stimulation of prices, which a factitious competition helps to make permanent.

[11] *American Bibliopolist*, viii. 128; Wynne's *Private Libraries of New York*, p. 318. The collection was not exclusively American.

The sale of John Allan's collection in New York, in 1864, was a noteworthy one. Americana, however, were but a portion of the collection.[2] An English-American flavor of far less fineness, but represented in a catalogue showing a very large collection of books and pamphlets,[3] was sold in New York in May, 1870, as the property of Mr. E. P. Boon.

Mr. Thomas W. Field issued in 1873 *An Essay towards an Indian Bibliography, being a Catalogue of books relating to the American Indians*, in his own library, with a few others which he did not possess, distinguished by an asterisk. Mr. Field added many bibliographical and historical notes, and gave synopses, so that the catalogue is generally useful to the student of Americana, as he did not confine his survey to works dealing exclusively with the aborigines. The library upon which this bibliography was based was sold at public auction in New York, in two parts, in May, 1875 (3,324 titles), according to a catalogue which is a distinct publication from the *Essay*.[4]

The collection of Mr. Almon W. Griswold was dispersed by printed catalogues in 1876 and 1880, the former containing the American portion, rich in many of the rarer books.

Of the various private collections elsewhere than in the United States, more or less rich in Americana, mention may be made of the *Bibliotheca Mejicana*[5] of Augustin Fischer, London, 1869; of the Spanish-American libraries of Gregorio Beéche, whose catalogue was printed at Valparaiso in 1879; and that of Benjamin Vicuña Mackenna, printed at the same place in 1861.[6]

In Leipsic, the catalogue of Serge Sobolewski (1873)[7] was particularly helpful in the bibliography of Ptolemy, and in the voyages of De Bry and others. Some of the rarest of Americana were sold in the Sunderland sale[8] in London in 1881–1883; and remarkably rich collections were those of Pinart and Bourbourg,[9] sold in Paris in 1883, and that of Dr. J. Court,[10] the first part of which was sold in Paris in May, 1884. The second part had little of interest.

Still another distinctive kind of bibliographies is found in the catalogues of the better class of dealers; and among the best of such is to be placed the various lists printed by Henry Stevens, a native of Vermont, who has spent most of his manhood in London. In the dedication to John Carter Brown of his *Schedule of Nuggets* (1870), he gives some account of his early bibliographical quests.[11] Two years after graduating at Yale, he says, he had passed "at Cambridge, reading passively with legal Story, and actively with historical Sparks, all the while sifting and digesting the treasures of the Harvard Library. For five years previously he had scouted through several States during his vacations, prospecting in out-of-the-way places for historical nuggets, mousing through town libraries and country garrets in search of anything old that was historically new for Peter Force and his American Archives. . . . From Vermont to Delaware many an antiquated churn, sequestered hen-coop, and dilapidated flour-barrel had yielded to him rich harvests of old papers, musty books, and golden pamphlets. Finally, in 1845, an irrefragable desire impelled him to visit the Old World, its libraries and book-stalls. Mr. Brown's enlightened liberality in those primitive years of his bibliographical pupilage contributed largely towards the boiling of his kettle. . . . In acquiring *con amore* these American Historiadores Primitivos, he . . . travelled far and near. In this labor of love, this journey of life, his tracks often become your tracks, his labors your works, his

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[1] Memoir of Mr. Crowninshield, by Charles Deane, in *Mass. Hist. Soc. Proc.*, xvii. 356. Mr. Stevens is said to have given about $9,500 for the library. It was sold in various parts, the more extensive portion in July, 1860. Allibone, vol. ii. p. 2,248.

[2] This collection — which Mr. Allan is said to have held at $15,000 — brought $39,000 at auction after his death.

[3] Another catalogue rich in pamphlets relating to America is that of Albert G. Greene, New York, 1869.

[4] The *Catalogue* is more correctly printed than the *Essay*. Sabin, *Bibliog. of Bibliog.*, p. cxxv.

[5] *Bibliotheca Mejicana, a collection of books relating to Mexico, and North and South America*; sold by Puttick & Simpson in London, June, 1869. (About 3,000 titles.)

[6] Jackson, *Bibl. Géog.*, nos. 844, 845.

[7] *Catalogue de la collection précieuse de livres anciens et modernes formant la Bibliothèque de feu M. Serge Sobolewski* (*de Moscou*) Leipsic, 1873.

[8] *Bibliotheca Sunderlandiana. Sale Catalogue of the Sunderland or Blenheim Library. Five Parts.* London, 1881–1883. (13,858 nos.)

[9] *Catalogue de livres rares et précieux, manuscrits et imprimés, principalement sur l'Amérique et sur les langues du monde entier, composant la bibliothèque de Alphonse L. Pinart, et comprenant en totalité la bibliothèque Mexico-Guatémalienne de M. l'abbé Brasseur de Bourbourg.* Paris, 1883. viii. 248 pp. 8°.

[10] *Catalogue de la précieuse bibliothèque de feu M. le Docteur J. Court, comprenant une collection unique de voyageurs et d'historiens relatifs à l'Amérique. Première partie.* Paris, 1884. (458 nos.)

[11] There is an account of his family antecedents, well spiced as his wont is, in the introduction to his *Bibliotheca Historica*, 1870.

libri your *liberi,*" he adds, in addressing Mr. Brown.

In 1848 Mr. Stevens proposed the publication, through the Smithsonian Institution, of a general *Bibliographia Americana*, illustrating the sources of early American history;[1] but the project failed, and one or more attempts later made to begin the work also stopped short of a beginning. While working as a literary agent of the Smithsonian Institution and other libraries, in these years, and beginning that systematic selection of American books, for the British Museum and Bodleian, which has made these libraries so nearly, if not quite, the equal of any collection of Americana in the United States, he also made the transcriptions and indexes of the documents in the State Paper Office which respectively concern the States of New Jersey, Rhode Island, Maryland, and Virginia. These labors are now preserved in the archives of those States.[2] Perhaps the earliest of his sale catalogues was that of a pseudo "Count Mondidier," embracing Americana, which were sold in London in December, 1851.[3] His *English Library* in 1853 was without any distinctive American flavor; but in 1854 he began, but suspended after two numbers, the *American Bibliographer* (100 copies).[4] In 1856 he prepared a *Catalogue of American Books and Maps in the British Museum* (20,000 titles), which, however, was never regularly published, but copies bear date 1859, 1862, and 1866.[5] In 1858 — though most copies are dated 1862[6] — appeared his *Historical Nuggets; Bibliotheca Americana, or a descriptive Account of my Collection of rare books relating to America.* The two little volumes show about three thousand titles, and Harrisse says they are printed "with remarkable accuracy." There was begun in 1885, in connection with his son Mr. Henry Newton Stevens, a continuation of these *Nuggets.* In 1861 a sale catalogue of his *Bibliotheca Americana* (2,415 lots), issued by Puttick and Simpson, and in part an abridgment of the *Nuggets* with similarly careful collations, was accepted by Maisonneuve as the model of his *Bibliothèque Américaine* later to be mentioned.[7]

In 1869–1870 Mr. Stevens visited America, and printed at New Haven his *Historical and Geographical Notes on the earliest discoveries in America*, 1453–1530, with photo-lithographic fac-similes of some of the earliest maps. It is a valuable essay, much referred to, in which the author endeavored to indicate the entanglement of the Asiatic and American coast lines in the early cartography.[8]

In 1870 he sold at Boston a collection of five thousand volumes, catalogued as *Bibliotheca Historica*[9] (2,545 entries), being mostly Americana, from the library of the elder Henry Stevens of Vermont. It has a characteristic introduction, with an array of readable notes.[10] His catalogues have often such annotations, inserted on a principle which he explains in the introduction to this one: "In the course of many years of bibliographical study and research, having picked up various isolated grains of knowledge respecting the early history, geography, and bibliography of this western hemisphere, the writer has thought it well to pigeon-hole the facts in notes long and short."

In October, 1870, he printed at London a *Schedule of Two Thousand American Historical Nuggets taken from the Stevens Diggings in September*, 1870, *and set down in Chronological Order of Printing from* 1490 *to* 1800 [1776], *described and recommended as a Supplement to my printed Bibliotheca Americana.* It included 1,350 titles.

In 1872 he sold another collection, largely Americana, according to a catalogue entitled *Bibliotheca Geographica & Historica; or, a Catalogue of* [3,109 *lots*], *illustrative of historical geography and geographical history. Collected, used, and described, with an Introductory Essay on Catalogues, and how to make them upon the Stevens system of photo-bibliography.* The title calls it a first part; but no second part ever appeared. Ten copies were issued, with about four hundred photographic copies of titles inserted. Some copies are found without the essay.[1]

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[1] Trübner, *Bibliographical Guide to American Literature* (1859), p. iv.; *North American Review*, July, 1850, p. 205, by George Livermore.

[2] Allibone, ii. 2247–2248.

[3] Sabin, vol. xii. no. 49,961.

[4] Stevens, *Historical Collections*, i. 874. It was ostensibly made in preparation for his projected *Bibliographia Americana.*

[5] *Historical Collections*, vol. i. no. 90; Allibone, vol. ii. p. 2248.

[6] Allibone, ii. 2248; *Historical Collections*, vol. i. no. 875; *Bibliotheca Historica* (1870), no. 1,974.

[7] Allibone, ii. 2248; *Historical Collections*, vol. i. no. 878.

[8] It was first published, less perfectly, in the *American Journal of Science*, vol. xcviii. p. 299; and of the separate issue seventy-five copies only were printed. *Bibliotheca Historica* (1870), no. 1,976. It was also issued as a part of a volume on the proposed *Tehuantepec Railway*, prepared by his brother, Simon Stevens, and published by the Appletons of New York the same year. *Ibid.* no. 1,977; *Historical Collections*, vol. i. nos. 894 895; Allibone, vol. ii. p. 2348, nos. 17, 18, 19.

[9] *Historical Collections*, vol. i. no. 897.

[10] It is a droll fancy of his to call his book-shop the "Nuggetory;" to append to his name "G. M. B.," for Green Mountain Boy; and even to parade in a similar titular fashion his rejection at a London Club, — "Bk-bld — Ath.-Cl."

The next year (1873) he issued a privately printed list of two thousand titles of American "Continuations," as they are called by librarians, or serial publications in progress as taken at the British Museum, quaintly terming the list *American books with tails to 'em*.[2]

Finally, in 1881, he printed Part I. of *Stevens's Historical Collections*, a sale catalogue showing 1,625 titles of books, chiefly Americana, and including his Franklin Collection of manuscripts, which he later privately sold to the United States Government, an agent of the Boston Public Library yielding to the nation.[3]

One of the earliest to establish an antiquarian bookshop in the United States was the late Samuel G. Drake, who opened one in Boston in 1830.[4] His special field was that of the North American Indians; and the history and antiquities of the aborigines, together with the history of the English Colonies, give a character to his numerous catalogues.[5] Mr. Drake died in 1875, from a cold taken at a sale of the library of Daniel Webster; and his final collections of books were scattered in two sales in the following year.[6]

William Gowans, of New York, was another of the early dealers in Americana.[7] The catalogues of Bartlett and Welford have already been mentioned. In 1854, while Garrigue and Christern were acting as agents of Mr. Lenox, they printed *Livres Curieux*, a list of desiderata sought for by Mr. Lenox, pertaining to such rarities as the letters of Columbus, Cartier, parts of De Bry and Hulsius, and the Jesuit Relations. This list was circulated widely through Europe, but not twenty out of the 216 titles were ever offered.[8]

About 1856, Charles B. Norton, of New York, began to issue American catalogues; and in 1857 he established *Norton's Literary Letter*, intended to foster interest in the collection of Americana.[9] A little later, Joel Munsell, of Albany, began to issue catalogues;[10] and J. W. Randolph, of Richmond, Virginia, more particularly illustrated the history of the southern parts of the United States.[11] The most important Americana lists at present issued by American dealers are those of Robert Clarke & Co., of Cincinnati, which are admirable specimens of such lists.[12]

In England, the catalogues of Henry Stevens and E. G. Allen have been already mentioned.

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[1] *Historical Collections*, vol. i. no. 898.

[2] *Historical Collections*, vol. i. no. 899.

[3] The public is largely indebted to the efforts of Mr. Theodore F. Dwight, the librarian and keeper of the Archives of the Department of State at Washington, for the ultimate success of the endeavor to secure these manuscripts to the nation. Mr. Stevens had lately (1885) formed a copartnership with his son, Mr. Henry N. Stevens, and had begun a new series of Catalogues, of which No. 1 gives his own publications, and No. 2 is a bibliography of New Hampshire History. He died in London, February 28, 1886.

[4] *N. E. Hist. and Geneal. Reg.*, 1863, p. 203. Dr. Homes, of Albany, is confident Joseph Bumstead was earlier in Boston than Mr. Drake. The *Boston Directory* represents him as a printer in 1800, and as a bookseller after 1816.

[5] His earliest catalogue appeared in 1842, as of his private library. Sabin's *Bibl. of Bibl.*, p. xlix. A collection announced for sale in Boston in 1845 was withdrawn after the catalogue was printed, having been sold to the Connecticut Historical Society for $4,000. At one time he amassed a large collection of American school-books to illustrate our educational history. They were bought (about four hundred in all) by the British Museum.

[6] Cf. Jackson's *Bibl. Géog.*, no. 684, and pp. 185, 199. Also see Vol. III. 361.

[7] His catalogues are spiced with annotations signed "Western Memorabilia." Sabin (*Dictionary*, vii. 369) quotes the saying of a rival regarding Gowans's catalogues, that their notes "were distinguished by much originality, some personality, and not a little bad grammar." His shop and its master are drawn in F. B. Perkins's *Scrope, or the Lost Library. A Novel.* Mr. Gowans died in November, 1870, at sixty-seven, leaving a stock, it is said, of 250,000 bound volumes, besides a pamphlet collection of enormous extent. Mr. W. C. Prime told the story of his life, genially, in *Harper's Magazine* (1872), in an article on "Old Books in New York." Speaking of his stock, Mr. Prime says: "There were many more valuable collections in the hands of booksellers, but none so large, and probably none so wholly without arrangement." Mr. Gowans was a Scotchman by birth, and came to America in 1821. After a varied experience on a Mississippi flat-boat, he came to New York, and in 1827 began life afresh as a bookseller's clerk. Cf. *American Bibliopolist*, January, 1871, p. 5.

[8] Harrisse, *Bibl. Amer. Vet.*, p. xxx.

[9] Jackson, *Bibl. Géog.*, nos. 670–676.

[10] Jackson, no. 687. See Vol. IV. p. 435. Munsell issued privately, in 1872, a catalogue of the works printed by him. Sabin, *Bibl. of Bibl.*, p. cv. Cf. a *Biographical Sketch of Joel Munsell, by George R. Howell, with a Genealogy of the Munsell Family, by Frank Munsell.* Boston, 1880. This was printed (16 pp.) for the New England Historic Genealogical Society.

[11] Jackson, no. 669.

[12] They have been issued in 1869, 1871, 1873, 1876, 1877, 1878, 1879, 1883. Jackson, nos. 705–711. Lesser lists have been issued in Cincinnati by William Dodge. The chief dealer in Americana in Boston, who issues catalogues, is, at the present time, Mr. George E. Littlefield.

The leading English dealer at present in the choicer books of Americana, as of all other subjects — and it is not too much to say, the leading one of the world — is Mr. Bernard Quaritch, a Prussian by birth, who was born in 1819, and after some service in the book-trade in his native country came to London in 1842, and entered the service of Henry G. Bohn, under whose instruction, and as a fellow-employé of Lowndes the bibliographer, he laid the foundations of a remarkable bibliographical acquaintance. A short service in Paris brought him the friendship of Brunet. Again (1845) he returned to Mr. Bohn's shop; but in April, 1847, he began business in London for himself. He issued his catalogues at once on a small scale; but they took their well-known distinctive form in 1848, which they have retained, except during the interval December, 1854,–May, 1864, when, to secure favorable consideration in the post-office rates, the serial was called *The Museum*. It has been his habit, at intervals, to collect his occasional catalogues into volumes, and provide them with an index. The first of these (7,000 entries) was issued in 1860. Others have been issued in 1864, 1868, 1870, 1874, 1877 (this with the preceding constituting one work, showing nearly 45,000 entries or 200,000 volumes), and 1880 (describing 28,009 books).[1] In the preface to this last catalogue he says: "The prices of useful and learned books are in all cases moderate; the prices of palæographical and bibliographical curiosities are no doubt in most cases high, that indeed being a natural result of the great rivalry between English, French, and American collectors. . . . A fine copy of any edition of a book is, and ought to be, more than twice as costly as any other."[2] While the Quaritch catalogues have been general, they have included a large share of the rarest Americana, whose titles have been illustrated with bibliographical notes characterized by intimate acquaintance with the secrets of the more curious lore.

The catalogues of John Russell Smith (1849, 1853, 1865, 1867), and of his successor Alfred Russell Smith (1871, 1874), are useful aids in this department.[3] The *Bibliotheca Hispano-Americana* of Trübner, printed in 1870, offered about thirteen hundred items.[4] Occasional reference can be usefully made to the lists of George Bumstead, Ellis and White, John Camden Hotten, all of London, and to those of William George of Bristol. The latest extensive Americana catalogue is *A catalogue of rare and curious books, all of which relate more or less to America*, on sale by F. S. Ellis, London, 1884. It shows three hundred and forty-two titles, including many of the rarer books, which are held at prices startling even to one accustomed to the rapid rise in the cost of books of this description. Many of them were sold by auction in 1885.

In France, since Ternaux, the most important contribution has come from the house of Maisonneuve et Cie., by whom the *Bibliotheca Americana* of Charles Leclerc has been successively issued to represent their extraordinary stock. The first edition was printed in 1867 (1,647 entries), the second in 1878[5] (2,638 entries, with an admirable index), besides a first supplement in 1881 (nos. 2,639–3,029). Mr. Quaritch characterizes it as edited "with admirable skill and knowledge."

Less important but useful lists, issued in France, have been those of Hector Bossange, Edwin Tross,[6] and the current *Americana* series of Dufossé, which was begun in 1876.[7]

In Holland, most admirable work has been done by Frederik Muller, of Amsterdam, and by Mr. Asher, Mr. Tiele, and Mr. Otto Harrassowitz under his patronage, of which ample accounts are given in another place.[1] Muller's catalogues were begun in 1850, but did not reach distinctive merit till 1872.[2] Martin Nijhoff, at the Hague, has also issued some American catalogues.

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[1] Another is now in progress.

[2] With these canons Mr. Quaritch's prices can be understood. The extent and character of his stock can be inferred from the fact that his purchases at the Perkins sale (1873) amounted to £11,000; at the Tite sale (1874), £9,500; at the Didot sales (1878–1879), £11,600; and at the Sunderland sales (1883), £32,650, out of a total of £56,851. At the recent sales of the Beckford and Hamilton collections, which produced £86,444, over one half, or £44,105, went to Mr. Quaritch. These figures enable one to understand how, in a sense, Mr. Quaritch commands the world's market of choice books. A sketch, *B. Q., a biographical and bibliographical Fragment* (1880, 25 copies), in the privately printed series of monographs issued to a club in London, of which Mr. Quaritch is president, called "The Sette of Odd Volumes," has supplied the above data. The sketch is by C. W. H. Wyman, and is also reprinted in his *Bibliography of Printing*, and in the *Antiquarian Magazine and Bibliographer*, November, 1882. One of the club's "opuscula" (no. iii.) has an excellent likeness of Mr. Quaritch prefixed. Cf. also the memoir and portrait in Bigmore and Wyman's *Bibliography of Printing*, ii. 230.

[3] Jackson, nos. 643–649; Trübner, *Bibliographical Guide*, p. xix.

[4] Mr. Trübner died in London March 30, 1884. Cf. memorial in *The Library Chronicle*, April, 1884, p. 43, by W. E. A. Axon; also a "Nekrolog" by Karl J. Trübner in the *Centralblatt für Bibliothekswesen*, June, 1884, p. 240.

[5] Cf. notice by Mr. Brevoort in *Magazine of American History*, iv. 230.

[6] There is a paper on "Edwin Tross et ses publications relatives à l'Amérique" in *Miscellanées bibliographiques*, Paris, 1878, p. 53, giving a list of his imprints which concern America.

[7] Jackson, nos. 689, 703, 717.

In 1858 Muller sold one of his collections of Americana to Brockhaus, of Leipsic, and the *Bibliothèque Américaine* issued by that publisher in 1861, as representing this collection, was compiled by one of the editors of the *Serapeum*, Paul Trömel, whom Harrisse characterizes as an "expert bibliographer and trustworthy scholar." The list shows 435 entries by a chronological arrangement (1507–1700).[3] Brockhaus again, in 1866, issued another American list, showing books since 1508, arranged topically (nos. 7,261–8,611). Mr. Otto Harrassowitz, of Leipsic, a pupil of Muller, of Amsterdam, has also entered the field as a purveyor of choice Americana. T. O. Weigel, of Leipsic, issued a catalogue, largely American, in 1877.

So well known are the general bibliographies of Watt, Lowndes, Brunet, Graesse, and others, that it is not necessary to point out their distinctive merits.[4] Students in this field are familiar with the catalogues of the chief American libraries. The library of Harvard College has not issued a catalogue since 1834, though it now prints bulletins of its current accessions. An admirable catalogue of the Boston Athenæum brings the record of that collection down to 1871. The numerous catalogues of the Boston Public Library are of much use, especially the distinct volume given to the Prince Collection. The Massachusetts Historical Society's library has a catalogue printed in 1859–60. There has been no catalogue of the American Antiquarian Society since 1837, and the New England Historic Genealogical Society has never printed any; nor has the Congregational Library. The State Library at Boston issued a catalogue in 1880. These libraries, with the Carter-Brown Library at Providence, which is courteously opened to students properly introduced, probably make Boston within easy distance of a larger proportion of the books illustrating American history, than can be reached with equal convenience from any other literary centre. A book on the private libraries of Boston was compiled by Luther Farnham in 1855; but many of the private collections then existing have since been scattered.[5] General Horatio Rogers has made a similar record of those in Providence. After the Carter-Brown Collection, the most valuable of these private libraries in New England is probably that of Mr. Charles Deane in Cambridge, of which mention has already been made. The collection of the Rev. Henry M. Dexter, D.D., of New Bedford, is probably unexampled in this country for the history of the Congregational movement, which so largely affected the early history of the English Colonies.[6]

Two other centres in the United States are of the first importance in this respect. In Washington, with the Library of Congress (of which a general consolidated catalogue is now printing), embracing as it does the collection formed by Col. Peter Force, and supplementing the archives of the Government, an investigator of American history is situated extremely favorably.[7] In New York the Astor and Lenox libraries, with those of the New York Historical Society and American Geographical Society, give the student great opportunities. The catalogue of the Astor Library was printed in 1857–66, and that of the Historical Society in 1859 No general catalogue of the Lenox Library has yet been printed. An account of the private libraries of New York was published by Dr. Wynne in 1860. The libraries of the chief importance at the present time, in respect to American history, are those of Mr. S. L. M. Barlow in New York, and of Mr. James Carson Brevoort in Brooklyn. Mr. Charles H. Kalbfleisch of New York has a small collection, but it embraces some of the rarest books. The New York State Library at Albany is the chief of the libraries of its class, and its principal characteristic pertains to American history.

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[1] Vol. IV. chap. viii. editorial note. There is an account of Muller and his bibliographical work in the *Centralblatt für Bibliothekswesen*, November, 1884.

[2] Jackson, nos. 650–654; Trübner, *Bibliographical Guide*, p. xix; Sabin, *Bibliog. of Bibliog.*, p. cv; Petzholdt, *Bibliotheca Bibliographica*.

[3] This collection was subsequently, with the exception of three lots, bought of Mr. Brockhaus by Henry Stevens. *Bibliotheca Geographica*, no. 343.

[4] More or less help will be derived from the American portion of the *Liste provisoire de bibliographies géographiques spéciales, par James Jackson*, published in 1881 by the Société de Géographie de Paris, — a book of which use has been made in the preceding pages.

[5] See the chapter on the libraries of Boston in the *Memorial History of Boston*, vol. iv.

[6] The extent of Dr. Dexter's library is evident from the signs of possession which are so numerously scattered through the 7,250 titles that constitute the exhaustive and very careful bibliography of Congregationalism and the allied phases of religious history, which forms an appendix to his *Congregationalism as seen in its Literature*, New York, 1880. He explains in the Introduction to his volume the wide scope which he intended to give to this list; and to show how poorly off our largest public libraries in America are in the earliest books illustrating this movement, he says that of the 1,000 earliest titles which he gives, and which bear date between 1546 and 1644, he found only 208 in American libraries. His arrangement of titles is chronological, but he has a full name-index.

The students of the early English colonies cannot fail to find for certain phases of their history much help from Joseph Smith's *Descriptive Catalogue of Friends' Books*, London, 1867; his *Bibliotheca Anti-Quakeriana*, 1873; and his *Bibliotheca Quakeristica*, a bibliography of miscellaneous literature relating to the Friends, of which Part I. was issued in London in 1883.

[7] The private library of George Bancroft is in Washington. It is described as it existed some years ago in Wynne's *Private Libraries of New York*.

The other chief American cities are of much less importance as centres for historical research. The Philadelphia Library and the collection of the Historical Society of Pennsylvania are hardly of distinctive value, except in regard to the history of that State. In Baltimore the library of the Peabody Institute, of which the first volume of an excellent catalogue has been printed, and that of the Maryland Historical Society are scarcely sufficient for exhaustive research. The private library of Mr. H. H. Bancroft constitutes the only important resource of the Pacific States;[1] and the most important collection in Canada is that represented by the catalogue of the Library of Parliament, which was printed in 1858.

This enumeration is intended only to indicate the chief places for ease of general investigation in American history. Other localities are rich in local helps, and accounts of such will be found elsewhere in the present History.[2]

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[1] A book on the private libraries of San Francisco by Apponyi was issued in 1878.

[2] An account of the libraries of the various historical societies in the United States is given in the *Public Libraries of the United States*, issued by the Bureau of Education at Washington in 1876.

INTRODUCTION.

By the Editor.

PART II. THE EARLY DESCRIPTIONS OF AMERICA AND COLLECTIVE ACCOUNTS OF THE EARLY VOYAGES THERETO.

OF the earliest collection of voyages of which we have any mention we possess only a defective copy, which is in the Biblioteca Marciana, and is called *Libretto de tutta la navigazione del Rè di Spagna delle isole e terreni nuovamente scoperti stampato per Vercellese.* It was published at Venice in 1504,[1] and is said to contain the first three voyages of Columbus. This account, together with the narrative of Cabral's voyage printed at Rome and Milan, and an original — at present unknown — of Vespucius' third voyage, were embodied, with other matter, in the *Paesi novamente retrovati et novo mondo da Alberico Vesputio Florentino intitulato*, published at Vicentia in 1507,[2] and again possibly at Vicentia in 1508, — though the evidence is wanting to support the statement, — but certainly at Milan in that year

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[1] The title is quoted differently by different authorities. Harrisse, *Bibl. Amer. Vet.*, no. 32, and *Additions*, no. 16; his *Christophe Colomb*, i. 89; Humboldt, *Examen critique*, iv. 67; Sabin, *Dictionary of Books relating to America*, x. 327; D'Avezac, *Waltzemüller*, p. 79; Varnhagen, *Nouvelles Recherches*, p. 17; Irving's *Columbus*, app. ix.

[2] See Vol. IV. p. 12. The editorship is in dispute, — whether Zorzi or Montalboddo. The better opinion seems to be that Humboldt erred in assigning it to Zorzi rather than to Montalboddo. Cf. Humboldt, *Examen critique;* Brunet, v. 1155, 1158; Sabin, *Dictionary*, vol. xii. no. 50,050; D'Avezac, *Waltzemüller*, p. 80; Graesse, *Trésor;* Harrisse, *Bibl. Amer. Vet.*, nos. 48, 109, app. p. 469, and *Additions*, no. 26; *Bulletin de la Société de Géographie*, October, 1857, p. 312; Santarem's *Vespucius*, Eng. tr., p. 73; Irving's *Columbus*, app. xxx.; Navarrete, *Opúsculos*, i. 101; Harrisse, *Christophe Colomb*, i. 89. There are copies of this 1507 edition in the Lenox and Carter-Brown libraries, and in the Grenville Library; and one in the Beckford sale, 1882 (no. 186), brought £270. Cf. also *Murphy Catalogue*, no. 2,612*, and *Catalogue de la précieuse bibliothèque de feu M. le Docteur J. Court* (Paris, 1884), no. 262. The *Paesi novamente retrovati* is shown in the chapter on the Cortereals in Vol. IV. to be of importance in elucidating the somewhat obscure story of that portion of the early Portuguese discoveries in North America. Since Vol. IV. was printed, two important contributions to this study have been made. One is the monograph of Henry Harrisse, *Les Cortereal et leur voyages au Nouveau-monde. D'après des documents nouveaux ou peu connus tirés des archives de Lisbonne et de Modène. Suivi du texte inédit d'un recit de la troisième expédition de Gasper Cortereal et d'une carte nautique portugaise de* 1502 *reproduite ici pour la première fois. Mémoire lu à l'Académie des inscriptions et belles-lettres dans sa séance du 1er juin*, 1883, and published in Paris in 1883, as Vol. III. of the *Recueil de voyages et de documents pour servir à l'histoire de la géographie depuis le XIIIe jusqu'à la fin du XVIe siècle.* The other is the excerpt from the *Archivo des Açores*, which was drawn from that work by the editor, Ernesto do Canto, and printed separately at Ponta Delgarda (S. Miguel) in an edition of one hundred copies, under the title of *Os Corte-Reaes, memoria historica accompanhada de muitos documentos ineditos.* Do Canto refers (p. 34) to other monographs on the Portuguese discoveries in America as follows: Sebastião Francisco Mendo Trigoso, — *Ensaio sobre os Descobrimentos e Commercio dos Portuguezes em as Terras Septentrionaes da America*, presented to the Lisbon Academy (1813), and published in their *Memorias da Litteratura*, viii. 305 Joaquim José Gonçalves de Mattos Corrêa, — *Acerca da prioridade das Descobertas feitas pelos portuguezes nas costas orientaes da America do norte*, which was printed in *Annaes maritimos e Coloniaes*, Lisbon, 1841, pp. 269–423. Luciano Cordeiro, — *De la part prise par les Portugais dans le découverte de l'Amerique.* Lisbon, 1876. This was a communication made to the Congrès des Américanistes in 1875. Cf. Vol. IV. p. 15.

(1508).[1] There were later editions in 1512,[2] 1517,[3] 1519[4] (published at Milan), and 1521.[5] There are also German,[6] Low German,[7] Latin,[8] and French[9] translations.

While this Zorzi-Montalboddo compilation was flourishing, an Italian scholar, domiciled in Spain, was recording, largely at first hand, the varied reports of the voyages which were then opening a new existence to the world. This was Peter Martyr, of whom Harrisse[10] cites an early and quaint sketch from Hernando Alonso de Herrera's *Disputatio adversus Aristotelez* (1517).[11] The general historians have always made due acknowledgment of his service to them.[12]

Harrisse could find no evidence of Martyr's First Decade having been printed at Seville as early as 1500, as is sometimes stated; but it has been held that a translation of it, — though no copy is now known, — made by Angelo Trigviano into Italian was the *Libretto de tutta la navigazione del Rè di Spagna*, already mentioned.[13] The earliest unquestioned edition was that of 1511, which was printed at Seville with the title *Legatio Babylonica*; it contained nine books and a part of the tenth book of the First Decade.[14] In 1516 a new edition, without map, was printed at Alcalá in Roman letter. The part of the tenth book of the First Decade in the 1511 edition is here annexed to the ninth, and a new tenth book is added, besides two other decades, making three in all.[15]

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[1] Harrisse, *Bibl. Amer. Vet.*, no. 55; D'Avezac, *Waltzemüller*, p. 80; Wieser, *Magalhâes-Strasse*, pp. 15, 17. There are copies in the Lenox, Carter-Brown, Harvard College, and Cincinnati Public libraries. The Beckford copy brought, in 1882, £78. Quaritch offered a copy in 1883 for £45. At the Potier sale, in 1870 (no. 1,791), a copy brought 2,015 francs; the same had brought 389 francs in 1844 at the Nodier sale. *Livres payés en vente publique* 1,000 *francs et au dessus*, 1877, p. 77. Cf. also Court, no. 263.

[2] Only one copy in the United States, says Sabin.

[3] In Carter-Brown and Lenox libraries; also in the Marciana and Brera libraries. Leclerc in 1878 priced a copy at 1,000 francs. Cf. Harrisse, no. 90, also p. 463, and *Additions*, no. 52; Sobolewski, no. 4,130; Brunet, v. 1158; Court, no. 264.

[4] Sabin, vol. xii. no. 50,054; Leclerc, no. 2,583 (500 francs). A copy was sold in London in March, 1883. There is a copy in the Cincinnati Public Library.

[5] Harrisse, no. 109; Sobolewski, no. 4,131; Carter-Brown, vol. i. no. 68; Murphy, no. 2,617.

[6] *Newe unbekanthe landte* (Nuremberg, 1508), by Ruchamer; copies are in the Lenox, Carter-Brown, Congress, and Cincinnati Public libraries. Cf. Sabin, vol. xii. no. 50,056; Carter-Brown, vol. i. no. 36; Harrisse, no. 57; Murphy, no. 2,613; Sobolewski, no. 4,069; D'Avezac, *Waltzemüller*, p. 83; Rosenthal, *Catalogue* (1884), no. 67, at 1,000 marks.

[7] *Nye unbekande Lande* (1508), in Platt-Deutsch, by Henning Ghetel, of Lubeck, following the German. Sabin, vol. xii. no. 50,057; Harrisse, *Additions*, no. 29. The Carter-Brown copy (*Catalogue*, vol. i. no. 37) cost about 1,000 marks at the Sobolewski (no. 4,070) sale, when it was described as an "édition absolument inconnu jusqu'au présent." Mr. C. H. Kalbfleisch has since secured a copy at 3,000 marks, — probably the copy advertised "as the second copy known," by Albert Cohn, of Berlin, in 1881, in his *Katalog*, vol. cxxxix. no. 27. Cf. *Studi biografici e bibliografici della Società Italiana*, i. 219.

[8] *Itinerariū Portugallēsiū e Lusitania in Indiā* (Milan, 1508), a Latin version by Archangelus Madrinanus, of Milan. Cf. D'Avezac, *Waltzemüller*, p. 82; Sabin, vol. xii. no. 50,058; Harrisse, no. 58; Sobolewski, no. 4,128; Muller (1870), no. 1,844. There are copies in the Lenox, Barlow, Harvard College, Carter-Brown (*Catalogue*, vol. i. no. 35), and Congressional libraries. The Beckford copy (no. 1,081) brought £78. Sabin quotes Bolton Corney's copy at £137. Copies have been recently priced at £30, £36, and £45. A copy noted in the *Court Catalogue* (no. 177) differs from Harrisse's collation.

[9] *Sensuyt le nouveau mōde*, supposed to be 1515; some copies vary in text. The Lenox Library has two varieties. Cf. Sabin, vol. xii. nos. 50,059, 50,061; Harrisse, no. 83, and *Additions*, no. 46; D'Avezac, *Waltzemüller*, p. 84. An edition of 1516 (*Le nouveau monde*) is in the Carter-Brown and Lenox libraries (Sabin, vol. xii. no. 50,062; Court, no. 248; Harrisse, no. 86; Sobolewski, no. 4,129). One placed in 1521 (*Sensuyt le nouveau mōde*) is in Harvard College Library (Harrisse, no. 111; Sabin, vol. xii. no. 50,063). Another (*Sensuyt le nouveau monde*) is placed under 1528 (Sabin, vol. xii. no. 50,064; Harrisse, no. 146, and *Additions*, no. 87).

[10] *Bibl. Amer. Vet.*, no. 50. Harrisse also gives a chapter to Peter Martyr in his *Christophe Colomb*, i. 85.

[11] See also the reference in Joannes Tritemius' *De scriptoribus ecclesiasticis* (Cologne, 1546), pp. 481-482. There have been within a few years two monographs upon Martyr: (1) Hermann A. Schumacher's *Petrus Martyr, der Geschichtsschreiber des Weltmeeres* (New York, 1879); (2) Dr. Heinrich Heidenheimer's *Petrus Martyr Anglerius und sein Opus epistolarum* (Berlin, 1881). This last writer gives a section to his geographical studies.

[12] Humboldt, *Examen critique*, ii. 279; Irving, *Columbus*, app.; Prescott, *Ferdinand and Isabella* (1873), ii. 74, and *Mexico*, ii. 96; H. H. Bancroft, *Central America*, i. 312; Helps, *Spanish Conquest*. Cf. Harrisse, *Bibl. Amer. Vet.*, nos. 66 and 160.

[13] Morelli's edition of *Letter of Columbus*, 1810.

[14] There is an examination of this edition on page 109 of Vol. II.

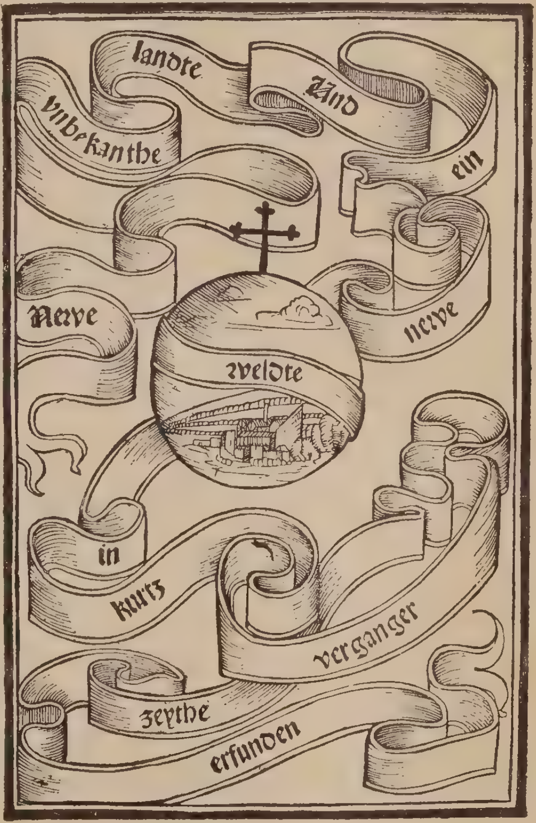
[15] Harrisse, *Bibl. Amer. Vet.*, no. 88; *Carter-Brown Catalogue*, vol. i. no. 50; Huth, p. 920; Brunet, i. 293; Murphy, no. 1,606; Leclerc, no. 2,647 (600 francs); Stevens, *Nuggets*, £10 10s.; *Bibliotheca Grenvilliana*. There is a copy in Charles Deane's collection. Tross priced a copy in 1873 at 900 francs.

There exists what has been called a German version (*Die Schiffung mitt dem lanndt der Gulden Insel*) of the First Decade, in which the supposed author is called Johan von Angliara; and its date is 1520, or thereabout; but Mr. Deane, who has the book, says that it is not Martyr's.[1] Some *Poemata*, which had originally been included in the publication of the First Decade, were separately printed in 1520.[2]

At Basle in 1521 appeared his *De nuper sub D. Carolo repertis insulis*, the title of which is annexed in facsimile. Harrisse [3] has called it an extract from the Fourth Decade; and a similar statement is made in the *Carter-Brown Catalogue* (vol. i. no. 67). But Stevens and other authorities define it as a substitute for the lost First Letter of Cortes, touching the expedition of Grijalva and the invasion of Mexico; and it supplements, rather than overlaps, Martyr's other narratives.[4] Mr. Deane contends that if the Fourth Decade had then been written, this might well be considered an abridgment of it.

The first complete edition (*De orbe novo*) of all the eight decades was published in 1530 at Complutum; and with it is usually found the map ("Tipus orbis universalis") of Apianus, which originally appeared in Camer's *Solinus* in 1520. In this new issue the map has its date changed to 1530.[5]

In 1532, at Paris, appeared an abridgment in French of the first three decades, together with an abstract of Martyr's *De insulis* (Basle, 1521), followed by abridgments of the printed second and third letters of Cortes, — the whole bearing the title, *Extraict ov Recveil des Isles nouuellemẽt trouuees en la grand mer Oceane*



TITLE OF THE NEWE UNBEKANTHE LANDTE (REDUCED).

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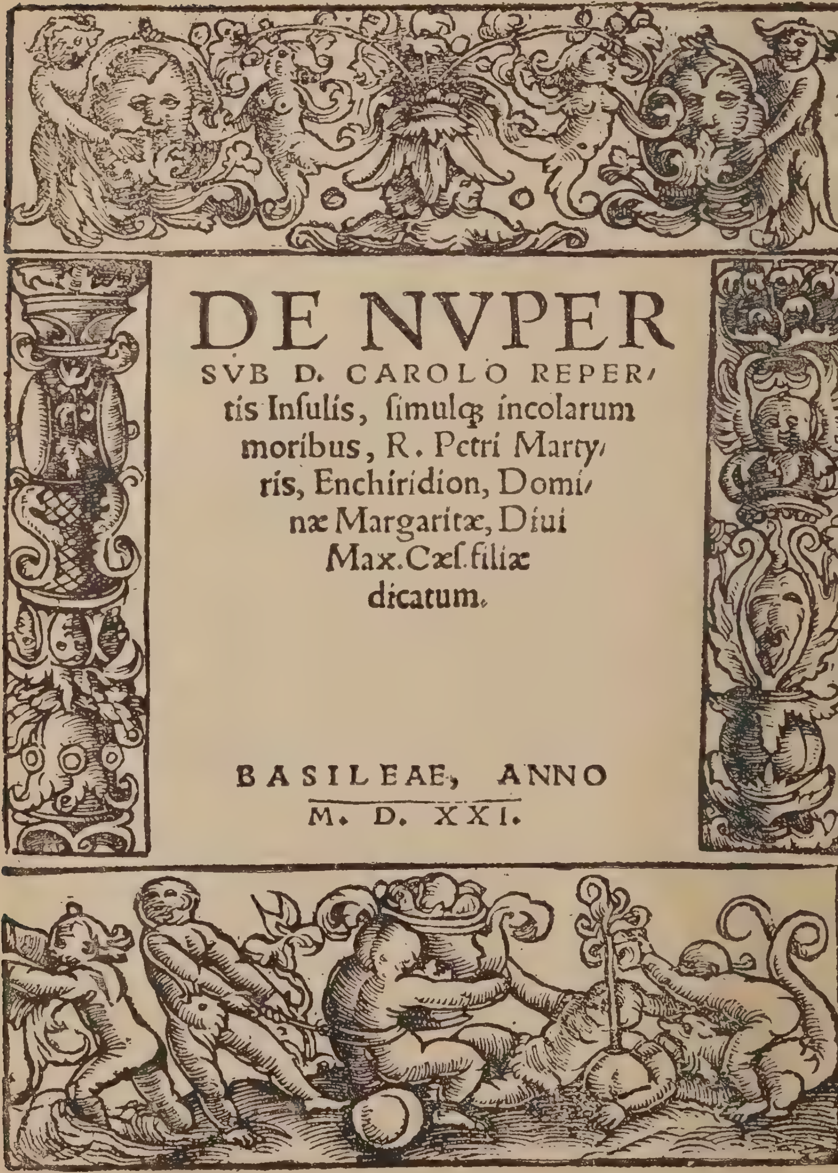
[1] *Carter-Brown Catalogue*, vol. i. no. 61; Graesse, *Trésor*, i. 130; Sabin, i. 201, who says Rich put it under 1560.

[2] *Bibl. Amer. Vet.*, no. 62; *Additions*, p. 78.

[3] *Bibl. Amer. Vet*, no. 110.

[4] There are copies in Harvard College and Carter-Brown libraries. Cf. Sabin, i. 199; Leclerc, no. 24 (150 francs); Court, no. 13; Murphy, no. 1,606*; Stevens, *Historical Collection*, i. 48; his *Nuggets*, £2 2s. But recent prices have been £20 and £25; Brunet, i. 294; Ternaux, no. 24; Sunderland, vol. iv. no. 8,173. This tract was reprinted in the *Novus orbis* (Basle, 1532), and was appended to the Antwerp edition (1536) of Brocard's *Descriptio terræ sanctæ* (Harrisse, *Bibl. Amer. Vet.*, no. 218; Carter-Brown, vol. i. no. 117). It is also in the *Novus orbis* of Rotterdam, 1596 (Carter-Brown, vol. i. no. 505).

[5] There are copies in the Harvard College, Lenox, and Carter-Brown libraries. It is very rare; a fair copy was priced in London, in 1881, at £62. Cf. Brunet, i. 293; *Carter-Brown Catalogue*, vol. i. no. 94; Sabin, i. 198; Harrisse, *Bibl. Amer. Vet.*, no. 154; Murphy, no. 1,607; Court, no. 14.



DE NVPER
SVB D. CAROLO REPERtis
Inſulis, ſimulqꝫ incolarum
moribus, R. Petri Martyris,
Enchiridion, Dominæ
Margaritæ, Diui
Max.Cæſ.filiæ
dicatum.

BASILEAE, ANNO
M. D. XXI.

en temps du roy Despaigne Fernād & Elizabeth sa femme, faict premierement en latin par Pierre Martyr de Millan, & depuis translate en languaige francoys.[1]

In 1533, at Basle, in folio, we find the first three decades and the tract of 1521 (*De insulis*) united in *De rebus oceanicis et orbe novo.*[2]

At Venice, in 1534, the *Summario de la generale historia de l' Indie occidentali* was a joint issue of Martyr and Oviedo, under the editing of Ramusio.[3] An edition of Martyr, published at Paris in 1536, sometimes mentioned,[4] does not apparently exist;[5] but an edition of 1537 is noted by Sabin.[6] In 1555 Richard Eden's *Decades of the Newe Worlde, or West India*, appeared in black-letter at London. It is made up in large part from Martyr,[7] and was the basis of Richard Willes' edition of Eden in 1577, which included the first four decades, and an abridgment of the last four, with additions from Oviedo and others, — all under the new name, *The History of Trauayle.*[8]

There was an edition again at Cologne in 1574, — the one which Robertson used.[9] Three decades and the *De insulis* are also included in a composite folio published at Basle in 1582, containing also Benzoni and Levinus, all in German.[10] The entire eight decades, in Latin, which had not been printed together since the Basle edition of 1530, were published in Paris in 1587 under the editing of Richard Hakluyt, with the title: *De orbe novo Petri Martyris Anglerii Mediolanensis, protonotarij, et Caroli quinti senatoris Decades octo, diligenti temporum obseruatione, et vtilissimis annotationibus illustratæ, suḃque nitori restitutæ, labore et industria Richardi Haklvyti Oxoniensis Angli. Additus est in vsum lectoris accuratus totius operis index.* Parisiis, apud Gvillelmvm Avvray, 1587. With its "F. G." map, it is exceedingly rare.[11]

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[1] The book is very rare. There is a copy in Harvard College Library. A copy was priced in London at £36; but Quaritch holds the Beckford copy (no. 2,275), in fine binding, at £148. Harrisse (*Bibl. Amer. Vet.*, no. 167) errs in his description. Cf. Brunet, i. 294; Sobolewski, no. 3,667; Sabin, i. 199; Huth, p. 920; Stevens, *Historical Collections*, i. 48; Carter-Brown, vol. i. no. 99; Murphy, no. 3,002; Court, no. 124.

[2] Richard Eden's copy of this book, with his annotations, apparently used in making his translation of 1555, was sold in the Brinley sale, no. 40, having been earlier in the Judge Davis sale in 1847 (no. 1,352). The first of the Stevens copies, in his sale of 1870 (nos. 75, 1,234), is now in Mr. Deane's library. There are also copies in the Force (Library of Congress), Carter-Brown (*Catalogue*, vol. i. no. 104), and Ticknor (*Catalogue*, p. 14) collections, and in Harvard College Library. Cf. Sabin, i.; Stevens's *Nuggets*, £1 11*s.* 6*d.*; Ternaux, no. 47; Harrisse, *Bibl. Amer. Vet.*, no. 176; Muller (1877), no. 2,031; Court, no. 15; Murphy, no. 1,608; Leclerc (1878), no. 25 (80 francs); Quaritch, no. 11,628 (£3 10*s.*; again, £5 5*s.*); Sunderland, vol. iv. no. 8,176 (£50). Priced in Germany at 60 and 100 marks.

[3] Ramusio's name does not appear, but D'Avezac thinks his editorship is probable; cf. *Bulletin de la Société de Géographie* (1872), p. 11. There are copies in Harvard College, Carter-Brown, J. C. Brevoort, H. C. Murphy, and Lenox libraries. For an account of a map said to belong to it, see Winsor's *Bibliography of Ptolemy*, sub anno 1540. Cf. *Bibl. Amer. Vet.*, no. 190; Stevens, *Historical Collections*, vol. i. no. 344, and *Nuggets*, vol. ii. no. 1,808; Murphy, no. 1,609; Sunderland, vol. iv. no. 8,177; Carter-Brown, vol. i. no. 107; Ternaux, no 43; Court, no. 213. Ramusio also included Martyr in the third volume of his *Navigationi*. Cf. the opinions of Mr. Deane and Mr. Brevoort on the *Summario* as given in Vol. III. p. 20.

[4] Brunet, Graesse, Ternaux.

[5] Harrisse, *Bibl. Amer. Vet.*, no. 214.

[6] Vol. i. p. 199.

[7] See Vol. III. p. 200; Murphy, no. 1,610.

[8] The book is rare; the copy in the Menzies sale (no. 1,332) brought $42.50. Cf. further in Vol. III. p. 204; also Cooke, no. 1,642.

[9] It has three decades and three books of the "De Babylonica legatione." There are copies in Harvard College and the Carter-Brown libraries. Cf. Rich (1832), no. 52; *Nuggets*, £1 10*s.* 6*d.*; Sabin, i. 201; Muller, 1877), no. 2,031; Carter-Brown, vol. i. no. 295; Leclerc, no. 26 (80 francs); Harrassowitz, 35 marks; Quaritch, £1 5*s.* and £1 16*s.*; Sunderland, vol. iv. no. 8,178; O'Callaghan, no. 1,479; Cooke, no. 1,641; Court, no. 16; Murphy, no. 1,611.

[10] Graesse, i. 130; Carter-Brown, vol. i. no. 344; Stevens (1870), no. 1,235.

[11] The Sunderland copy (vol. iv. no 8,179), with the map, brought £24; a French catalogue advertised one with the map for 250 francs. Without the map it is worth about $25. See further in Vol III. p. 42; also Murphy, no. 1,612; Cooke, no. 1,643; Court, no. 17. Hakluyt's text was used by Lok in making an English ver-ion (he adopted, however, Eden's text of the first three decades), which was printed as *De Novo Orbe; or, the Historie of the West Indies.* Bibliographers differ about the editions. One without date is held by some to have been printed in 1597 (White-Kennett; Field, *Indian Bibliography*, no. 1,013; Menzies, no. 1,333, $35; Huth, p. 923); but others consider it the sheets of the 1612 edition with a new title (see Vol. III. p. 47, Field, no. 1,014; Stevens, 1870, no. 1,236; Harrisse, *Notes on Columbus*, p. 10; O'Callaghan, no. 1,481; Murphy, no. 1,612*; Carter-Brown, vol. i. nos. 129, 130). There are copies of this 1612 edition in the Boston Athenæum, Harvard College, Carter-Brown, and Massachusetts Historical Society libraries; it is worth from $30 to $40. Mr. Deane's edition of 1612 has a dedication to Julius Cæsar, the English jurist of that day, which is not in the edition without date. See Vol. III. p. 47. The same was reissued as a "second edition," with a title dated 1628, of which there is a copy in Harvard College Library (Field, no. 1,015; Stevens, *Nuggets*, £4 14*s.* 6*d.*; Menzies, no. 1,334; Griswold, no. 475; Quaritch, £9 and £12).

GRYNÆUS.[1]

As illustrating in some sort his more labored work, the *Opus epistolarum Petri Martyris* was first printed at Complutum in 1530.[2] The letters were again published at Amsterdam, in 1670,[3] in an edition which had the care of Ch. Patin, to which was appended other letters by Fernando del Pulgar.[4]

The most extensive of the early collections was the *Novus orbis*, which was issued in separate editions at Basle and Paris in 1532. Simon Grynæus, a learned professor at Basle, signed the preface; and it usually passes unde his name. Grynæus was born in Swabia, was friend of Luther, visited England in 1531, an died in Basle, in 1541. The compilation, however, is the work of a canon of Strasbur John Huttich (born about 1480; died, 1544 but the labor of revision fell on Grynæus.[5] has the first three voyages of Columbus, an those of Pinzon and Vespucius; the rest of th book is taken up with the travels of Marc Polo and his successors to the East.[6]

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[1] Fac-simile of cut in Reusner's *Icones* (Strasburg, 1590), p. 107.

[2] Brunet, i. 294; Harrisse, *Notes on Columbus*, p. 10; *Bibl. Amer. Vet.*, no. 160; Carter-Brown, vol. no. 93; Sunderland, vol. iv. no. 8,174, (£61). There is also a copy in Harvard College Library.

[3] Sabin, i. 200. Copy in Harvard College Library; it was printed at the Elzevir Press (Harrisse, *Not on Columbus*, p. 11; Carter-Brown, vol. ii. no. 1,036; Sunderland, vol. iv. no. 8,175).

[4] Prescott's copy is in Harvard College Library (*Ferdinand and Isabella*, 1873, ii. 76).

[5] Cf. Arana, *Bibliog. de obras anon.* (1882), no. 373.

[6] There are copies of this Basle edition in the Boston Public, Harvard College, Carter-Brown, Leno Astor, and Barlow libraries. Münster's map, of which an account is given elsewhere, is often wanting; t price for a copy with the map has risen from a guinea in Rich's day (1832), to £5. Cf. Harrisse, no. 17 Leclerc, no. 411; Muller (1877), no. 1,301; Ternaux, no. 38; Sabin, vol. ix. no. 34,100; Court, no. 249. Th Paris edition has the Orontius Finæus map properly, though others are sometimes found in it. Cf. Harriss

ext appeared in a German translation at Strasurg in 1534, which was made by Michal Herr, *ie New Welt.* It has no map, gives more from artyr than the other edition, and substitutes preface by Herr for that of Grynæus.[1] The riginal Latin was reproduced at Basle again in 537, with 1536 in the colophon.[2] In 1555 nother edition was printed at Basle, enlarged pon the 1537 edition by the insertion of the econd and third of the Cortes letters and some ccounts of efforts in converting the Indians.[3] hose portions relating to America exclusively ere reprinted in the Latin at Rotterdam in 616.[4]

Sebastian Münster, who was born in 1489, as forty-three years old when his map of the orld — which is preserved in the Paris (1532) dition of the *Novus orbis* — appeared. This is the first time that Münster significantly comes before us as a describer of the geography of the New World. Again in 1540 and 1542 he was associated with the editions of Ptolemy issued at Basle in those years.[5] It is, however, upon his *Cosmographia*, among his forty books, that Münster's fame chiefly rests. The earliest editions are extremely rare, and seem not to be clearly defined by the bibliographers. It appears to have been originally issued in German, probably in 1544 at Basle,[6] under the mixed title: *Cosmographia. Beschreibūg aller lender Durch Sebastianum Munsterum. Getruckt zü Basel durch Henrichųm Petri, Anno MDxliiij.*[7] He says that he had been engaged upon it for eighteen years, keeping Strabo before him as a model. To the section devoted to Asia he adds a few pages "Von den neüwen inseln" (folios

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os. 172, 173; Carter-Brown, vol. i. no. 102; Sabin, vol. ix. nos. 34,101, 34,102; Leclerc, nos. 412 (150 francs), 769; Stevens, *Bibliotheca geographica*, p. 124; Cooke, no. 2,879; Court, no. 250; Sunderland, no. 263; uller (1872), no. 1,847; Quaritch (1883) £12 16*s*. The Lenox Library has copies of different imprints, — apud Galeotum" and "apud Parvum." There are other copies in the Barlow and Carter-Brown libraries. ood copies are worth about £10.

[1] Sabin (vol. ix. p. 30) says it is rarer than the original Latin. There are copies in Harvard College, ongressional, and Carter-Brown libraries. Cf. Rich (1832), £1 1*s*.; Ternaux, no. 45; Sabin, vol. ix. o. 34,106; Grenville, p. 498; Harrisse, no. 188, with references; Stevens (1870), no. 1,419; Muller (1872), o. 1,853, and (1877) no. 1,309 (40 florins), with corrections of Harrisse; Sobolewski, no. 3,857; Carter-rown, vol. i. no. 110; Huth, vol. iii. nos 1,050–1,051. Quaritch and others of late price it at £3. It as from this German edition of the *Novus orbis* that the collection, often quoted as that of Cornelis byn, and called *Nieuwe Weerelt*, was made up in 1563, with some additional matter. It is in the dialect of rabant, and Muller (*Books on America*, 1872, no. 1,854) says it is "exceedingly rare, even in Holland;" he rices it at 50 florins. Cf. Leclerc, no. 2,579 (250 francs); Sabin, vol. ix. no. 34,107; Carter-Brown, vol. i. o. 240; Huth, vol. iii. no. 1,051; A. R. Smith's Catalogue (1874), no. 8 (£2 2*s*.); Pinart, no. 668.

[2] It has pp. 585–600 in addition to the edition of 1532. There are copies in the Cornell University (*Sparks atalogue*, no. 1,107), Lenox, Carter-Brown, Barlow, J. C. Brevoort, and American Antiquarian Society libraes. One of the two copies in Harvard College Library belonged at different times to Charles Sumner, E. A. rowninshield (no. 796), and the poet Thomas Gray, and has Gray's annotations, and a record that it cost him e shilling and ninepence. The map of the 1532 Basle edition belongs to this 1537 edition; but it is often anting. The *Huth Catalogue* (vol. iii. p. 1050) calls the map of "extreme rarity;" and Quaritch has pointed t that the larger names in the map being set in type in the block, there is some variation in the style of these scriptions belonging to the different issues. Cf. Sabin, vol. ix. no. 34,103; Harrisse, no. 223; Carter-Brown, ol. i. no. 123; Leclerc, no. 413, with map (100 francs); Stevens (*Nuggets*) does not mention the map, but s *Bibliotheca historica* (1870), no. 1,455, and *Historical Collections*, p. 66, give it; Muller (1872), no. 1,850 and 877) no. 1,306. Recent prices of good copies with the map are quoted at £4 4*s*., 57 marks, and 70 francs; ithout the map it brings about $4.00. Grolier's copy was in the Beckford sale (1882), no. 187.

[3] There are copies in the Boston Public (two copies). Boston Athenæum, Harvard College, Carter-Brown o. 202), and American Antiquarian Society libraries. The map is repeated from the earlier Basle editions. f. *Brinley Catalogue*, no. 50; *Huth Catalogue* (without map), iii. 1,050; Harrisse, no. 171; Stevens, *istorical Collection*, vol. i. no. 501; Cooke, no. 1,064; Sabin, vol. ix. no. 34,104. Rich, in 1832, priced it ith map at £2 2*s*; recent prices are £4 4*s*. and £5 5*s*.

[4] Edited by Balthazar Lydius. Cf. Carter-Brown, vol. ii. no. 182; Graesse, iv. 699; Brunet, iv. 132; abin, vol. ix. no. 34,105; Huth, iii. 1051; Leclerc, no. 414 (40 francs); Stevens, *Nuggets*, £2 2*s*.; Court, o. 251; Muller (1872), no. 1,870. There are copies in Harvard College Library and Boston Athenæum.

[5] The editions of Ptolemy recording or affecting the progress of geography in respect to the New World e noted severally elsewhere in the present work; but the whole series is viewed together in the *Bibliography Ptolemy's Geography*, by Justin Winsor, which, after appearing serially in the *Harvard University Bulletin*, as issued separately by the University Library in 1884 as no. 18 of its *Bibliographical Contributions*.

[6] H. H Bancroft, *Mexico*, i. 258. Harrisse (*Bibl. Amer. Vet.*, no 237) gives the date 1541 as apparently e first edition. His authority is the *Labanoff Catalogue;* but the date therein is probably an error (Sabin, ol. xii. no. 51,384). The *Athenæ Rauricæ* cites a Latin edition of 1543, — it is supposed without warrant, ough it is also mentioned in Poggendorff's *Biog.-liter. Handwörterbuch*, ii. 234.

[7] Harrisse (*Bibl. Amer. Vet.*, no. 258), describing a copy in the Lenox Library. The map of America in is edition is given by Santarem, and much reduced in Lelewel. There are twenty-four maps in it in all (Sabin, ol. xii. no. 51,385).

SEBASTIANUS MUNSTERUS COSMOGRAPHUS
Naſcitur Ingelheim Anno 1489. Obijt Baſileæ a° 1552.
Dimenſus terras et ſummi ſydera cöeli,
Edebam Hebræos Hiſtoricoſq; libros.
Xx 3

MÜNSTER.[1]

dcxxxv–dcxlij). This account was scant; and though it was a little enlarged in the second edition in 1545,[2] it remained of small extent through subsequent editions, and was confined to ten pages in that of 1614. The last of the German editions appeared in 1628.[3] The earliest

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[1] Fac-simile of the cut in the *Ptolemy* of 1552.

[2] Also published at Basle (Harrisse, *Bibl. Amer. Vet.*, *Additions*, no. 152; Weigel, 1877, *Catalogue;* Sabin, vol. xii. no. 51,386). It has twenty-eight maps. There is a copy in the Royal Library at Munich.

[3] The third and later German editions were as follows: 1546. According to the *Athenæ Rauricæ*. — 1550. Basle, 1,233 pages, woodcuts, with views of towns added for the first time, and fourteen folios of maps. Harrisse (no. 294) quotes the description in Ebert's *Dictionary*, no. 14,500. Cf. Sabin, vol. xii. no. 51,387; Leclerc, no. 396; Rosenthal (Munich, 1884), no. 52, at 80 marks. Harrisse (*Additions*, no. 179) says the Royal Library at Munich has three different German editions of 1550. — 1553. Basle. Muller (*Books on

SEBASTIANVS MVNSTERVS
Coſmographus.

Sat linguæ fuerat fontes mihi tradere ſanctæ:
Scribere ſed mundi me iuuat hiſtoriam.

M. D. LII.

MÜNSTER.[1]

ndoubted Latin text[2] appeared at Basle in 550, with the same series of new views, etc., by Manuel Deutsch, which were given in the German edition of that date.[3] With nothing

merica, 1872, no. 1,020; 1877, no. 2,203) cites a copy, with twenty-six maps; also Sabin (vol. xii. no. 51,388). — 56. Cited by Sabin, vol. xii. no. 53,389. — 1561. Basle. Cf. Rosenthal, *Catalogue* (1884), no. 53. — 1564. asle. Cf. Sabin, vol. xii. no. 51,390; *Carter-Brown Catalogue*, i. 598. It has fourteen maps, the last being the New World. — 1569, 1574, 1578. Basle. All are cited by Ebert and Harrisse, who give them twenty-x maps, and say that the cuts are poor impressions. — 1574, 1578, 1588. Undated; but cited by Sabin, l. xii. no. 51,391–51,393. — 1592, 1598. In these editions the twenty-six maps and the woodcuts are but a change of title apparently, there were reissues of this edition in 1551, 1552, and 1554,[1] and again in 1559.[2] The edition of 1572 has the same map, "Novæ insulæ," used in the 1554 editions; but new names are added, and new plates of Cusco and Cuba are also furnished.[3]

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[1] Fac-simile of a cut in Reusner's *Icones* (Strasburg, 1590), p. 171.

[2] The *Athenæ Rauricæ* gives a Latin edition of 1545.

[3] This 1550 Latin edition has fourteen maps, and copies are worth from $12 to $15. Cf. *Bibl. Amer et.*, no. 300; *Huth Catalogue*, iii. 1,009; Sabin, vol. xii. no. 51,379; Strutt, *Dictionary of Engravers*.

The earliest French edition, according to Brunet,[4] appeared in 1552; and other editions followed in that language.[5] Eden gave the fifth book an English dress in 1553, which was again issued in 1572 and 1574.[6] A Bohemian edition, made by Jan z Puchowa, *Kozmograffia Czieská*, was issued in 1554.[7] The first Italian edition was printed at Basle in 1558, using the engravec plates of the other Basle issues; and finally, ir 1575, an Italian edition, according to Brunet, appeared at Colonia.

The best-known collection of voyages of the sixteenth century is that of Ramusio, whose third volume — compiled probably in 1553, anc printed in 1556 — is given exclusively to American voyages.[9] It contains, however, little regarding Columbus not given by Peter Marty and Oviedo, except the letter to Fracastoro.[10] In Ramusio the narratives of these early voyages first got a careful and considerate editor

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engraved after new drawings. That of 1592 is in the Boston Athenæum; that of 1598 is in Harvard College Library. The likeness of Münster on the title is inscribed: "Seins alters lx jar." America is shown in the general mappemonde, and in map no. xxvi., "Die Newe Welt." Sabin, vol. xii. no. 51,394–51,395. — 1614 1628. These Basle editions reproduced the engravings of the 1592 and 1598 editions, and are considerec the completest issues of the German text. They are worth from 30 to 40 marks each. Sabin, vol. xii no. 51,396.

[1] The title of the 1554 edition as shown in the copy in the Boston Public Library reads as follows: *Cosm | graphiae | uniuersalis Lib. VI. in | quibus iuxta certioris fidei scriptorum | traditionem describuntur, | Omnium habitabilis orbis partium situs, pro- | priæq' dotes. | Regionum Topographicæ effigies. | Terra ingenia, quibus sit ut tam differentes & ua | rias specie res, & animatas, & inanimatas, ferat. | Animaliun peregrinorum naturæ & picturæ. | Nobiliorum ciuitatum icones & descriptiones. | Regnorum initia, incrementa & translationes. | Regum & principum genealogiæ. | Item omnium gentium mores, leges, religio, mu- | tationes: atq' memorabilium in hunc usque an- | num* 1554. *gestarum rerum Historia. | Autore Sebast. Munstero.* The same edition is in the Harvard College Library; but the title varies, and reads thus: *Cosmo | graphiæ | uniuersalis Lib. VI. in | quibus, iuxta certioris fidei scriptorum | traditionem describuntur, | Omniū habitabilis orbis partiū situs, propriæq' dotes. | Regionum Topographicæ effigies. | Terræ ingenia quibus sit ut tam differentes & uarias | specie res, & animatas & inanimatas, ferat. | Animalium peregrinorum naturæ & picturæ. | Nobiliorum ciuitatum icones & descriptiones. | Regnorum initia, incrementa & translationes. | Omnium gentium mores, leges, religio, res gestæ, mu- | tationes: Item regum & principun genealogiæ. | Autore Sebast. Munstero.* | The colophon in both reads: | *Basileæ Apvd Henrichvm Petri, | Mense Septemb. Anno Sa | lvtis M.D.LIIII.* | This copy belonged to Dr. Mather Byles, and has his autograph; the title is mounted, and may have belonged to some other one of the several "title-editions" whicl appeared about this time. Cf. *Harvard University Bulletin*, ii. 285; *Carter-Brown*, vol. i. no. 194; Sabin vol. xii. no. 51,380 51,381. The account of America is on pages 1,099–1,113. These editions have been bough of late years for about $4; but Rosenthal (Munich, 1884) prices a copy of 1552 at 130 marks, and one of 155 at 150 marks.

[2] Sabin, vol. xii. no. 51,382; Muller, *Books on America* (1872), p. 11.

[3] Some copies have nineteen maps, others twenty-two in all. Cf. Carter-Brown, vol. i. no. 291; Sabin vol. xii. no. 51,383. Some passages displeasing to the Catholics are said to have been omitted in this edition It is worth about $12 or $15.

[4] *Supplément*, col. 1,129; Sabin, vol. xii. no. 51,397.

[5] That of Basle, 1556, has on pp. 1,353–1,374, "Des nouvelles ilsles: comment, quand et par qui elles on esté trouvées," with a map and fourteen woodcuts. It is usually priced at about $20; the copies are commonl worn (Sabin, vol. xii. no. 51,398). The same publisher, Henry Pierre, reissued it (without date) in 1568, witl twelve folding woodcut maps, the first of which pertains to America (Carter-Brown, vol. i. no. 271; Sabin vol. xii. no. 51,399). In 1575 a new French edition, with the cuts reduced, was issued in three volumes, folio edited by Belleforest and others; it gives 101 pages to America. Cf. Brunet, col. 1,945; *Supplément* col. 1,129; Stevens (1870) p. 121; Sunderland, no. 8,722 (£18 10*s*.); Porquet (1884), no. 1,673, (150 francs) Sabin, vol. xii. no. 51,400.

[6] Cf. Vol. III. of the present *History*, pp. 200, 201.

[7] Weigel (1877), p. 96; Sabin, vol. xii. no. 51,401.

[8] *Supplément*, col. 1,129. Cf. also Weigel (1877), p. 96; Carter-Brown, vol. ii. no. 1,132; Sabin, vol. xii nos. 51,402–51,403.

[9] *Terzo volume delle navigationi et viaggi*, etc., Venice, 1556. His name is, Latinized, Ramusius.

[10] Harrisse, *Notes on Columbus*, p. 46. A list of the Contents is given in the *Carter-Brown Catalogu* (vol. i. p. 181), and in Leclerc (no. 484), where a set (1554, 1583, 1565) is priced at 250 francs. Of interest i connection with the present History, there are in the first volume of Ramusio the voyages of Da Gama, Vespucius, and Magellan, as well as matter of interest in connection with Cabot (see Vol. III. p. 24); in the secon volume (1559), the travels of Marco Polo, the voyage of the Zeni and of Cabot. The first edition of the firs volume was published in 1550; Ramusio's name does not appear. A second edition came out in 1554. Cf *Murphy Catalogue*, nos. 2,096–2,098; Cooke, no. 2,117.

who at this time was ripe in knowledge and experience, for he was well beyond sixty,[1] and he had given his maturer years to historical and geographical study. He had at one time maintained a school for topographical studies in his own house. Oviedo tells us of the assistance Ramusio was to him in his work. Locke has praised his labors without stint.[2]

Monardes, one of the distinguished Spanish physicians of this time, was busy seeking for the simples and curatives of the New World plants, as the adventurers to New Spain brought them back. The original issue of his work was the *Dos Libros*, published at Seville in 1565, treating "of all things brought from our West Indies which are used in medicine, and of the Bezaar Stone, and the herb Escuerçonera." This book is become rare, and is priced as high as 200 francs and £9.[8] The "segunda parte" is sometimes found separately with the date 1571; but in 1574 a third part was printed with the other two, — making the complete work, *Historia medicinal de nuestras Indias*, — and these were again issued in 1580.[4] An Italian version, by Annibale Briganti, appeared at Venice in 1575 and 1589,[5] and a French, with Du Jardin, in 1602.[6] There were three English editions printed under the title of *Joyfull Newes out of the newe founde world, wherein is declared the rare and singular virtues of diverse and sundry Herbes, Trees, Oyles, Plantes, and Stones, by Doctor Monardus of Sevill, Englished by John Frampton*, which first appeared in 1577, and was reprinted in 1580, with additions from Monardes' other tracts, and again in 1596.[7]

EFFIGIES NICOLAI MONARDIS MEDICI HISPALENSIS: ÆTATIS SVÆ ANNO 73

MONARDES.

The Spanish historians of affairs in Mexico, Peru, and Florida are grouped in the *Hispanicarum rerum scriptores*, published at Frankfort in 1579–1581, in three volumes.[8] Of Richard Hakluyt and his several collections, — the *Divers Voyages* of 1582, the *Principall Navigations* of

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[1] Born in 1485–1486; died in 1557. There is an alleged portrait of Ramusio in the new edition of *Il viaggio di Giovan Leone*, etc. (Venice, 1857), the only volume of it published. The portrait of him by Paul Veronese in the hall of the Great Council was burned in 1557; and Cicogna (*Biblioteca Veneziana*, ii. 310) says that the likeness now in the Sala dello Scudo is imaginary.

[2] Cf. also Camus, *Mémoire sur De Bry*, p. 8; Humboldt, *Examen critique;* Hallam, *Literature of Europe;* Harrisse, *Bibl. Amer. Vet.*, no. 304; Brunet, vol. iv. col. 1100; Carter-Brown, vol. i. no. 195; Clarke's *Maritime Discovery*, p. x, where Tiraboschi's account of Ramusio is translated; and H. H. Bancroft, *Mexico*, i. 282. Ternaux mentions a second edition in 1564; but Harrisse could find no evidence of it (*Bibl. Amer. Vet.*, p. xxxiii). There was a well-known second edition of the third volume in 1565 (differing in title only from the 1556 edition), which, with a first volume of 1588 and a second volume of 1583, is thought to make up the most desirable copy; though there are some qualifications in the case, since the 1606 edition of the third volume is really more complete.

[8] Carter-Brown, vol. i. no. 275.

[4] Cf. Carter-Brown, vol. i. nos. 287, 288, 299, 337; Sunderland, nos. 8,569, 8,570; Brinley, no. 44; Murphy, no. 1,709; Court, no. 241.

[5] Court, no. 242.

[6] Carter-Brown, i. 386; ii. 12; Brinley, no. 45.

[7] The different editions in the various languages are given in Sabin, xii. 282.

[8] Sabin, vol. viii. no. 32,004.

ANNO ÆTATIS SVÆ LXIX, A° CHRI 1597
THEODORVS DE BRY LEODIENSIS
DOMINE
doce me ita reliquos vitæ mea dies
transigere vt in vera pietate viuam & moriar
NVL SANS SOVCY
DE BRY.

PORTRAIT OF DE BRY.[1]

1589, and his enlarged edition, of which the third volume (1600) relates to America, — there is an account in Vol. III. of the present work.[2]

The great undertaking of De Bry was also begun towards the close of the same century. De Bry was an engraver at Frankfort, and his professional labors had made him acquainted with works of travel. The influence of Hakluyt and a visit to the English editor stimulated him to undertake a task similar to that of

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[1] This follows a print given in fac-simile in the *Carter-Brown Catalogue*, i. 316.

[2] A complete reprint of all of Hakluyt's publications, in fourteen or fifteen volumes, is announced (1884) by E. and G. Goldsmid, of Edinburgh.

FEYERABEND.[1]

he English compiler. He resolved to inlude both the Old and New World; and e finally produced his volumes simultaneously n Latin and German. As he gave a larger ize to the American parts than to the others, he commonly used title, referring to this differnce, was soon established as *Grands et petits oyages*.[2] Theodore De Bry himself died in Iarch, 1598; but the work was carried forward y his widow, by his sons John Theodore and ohn Israel, and by his sons-in-law Matthew Merian and William Fitzer. The task was not finished till 1634, when twenty-five parts had been printed in the Latin, of which thirteen pertain to America; but the German has one more part in the American series. His first part — which was Hariot's *Virginia* — was printed not only in Latin and German, but also in the original English[3] and in French; but there seeming to be no adequate demand in these languages, the subsequent issues were confined to Latin and German. There was a gap in the dates of publication between 1600 (when the ninth part is called "postrema pars") and 1619–1620, when the tenth and eleventh parts appeared at Oppenheim, and a twelfth at Frankfort in 1624. A thirteenth and fourteenth part appeared in German in 1628 and 1630; and these, translated together into Latin, completed the Latin series in 1634.

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[1] Sigmund Feyerabend was a prominent bookseller of his day in Frankfort, and was born about 1527 or 528. He was an engraver himself, and was associated with De Bry in the publications of his *Voyages*.

[2] The title, however, as given in catalogues generally, runs: *Collectiones peregrinationum in Indiam ientalem et Indiam occidentalem, XXV partibus comprehensæ a Theodoro, Joan-Theodoro De Bry, a Matheo Merian publicatæ. Francofurti ad Mœnum*, 1590–1634.

[3] This part is of extreme rarity, and Dibdin says that Lord Oxford bought the copy in the Grenville Library 1740 for £140. Cf. Vol. III. p. 123.

Without attempting any bibliographical description,[1] the succession and editions of the American parts will be briefly enumerated: —

I. *Hariot's Virginia.* In Latin, English, German, and French, in 1590; four or more impressions of the Latin the same year. Other editions of the German in 1600 and 1620.

II. *Le Moyne's Florida.* In Latin, 1591 and 1609; in German, 1591, 1603.

III. *Von Staden's Brazil.* In Latin, 1592, 1605, 1630; in German, 1593 (twice).

IV. *Benzoni's New World.* In Latin, 1594 (twice), 1644; in German, 1594, 1613.

V. *Continuation of Benzoni.* In Latin, 1595 (twice); in German, two editions without date, probably 1595 and 1613.

VI. *Continuation of Benzoni* (*Peru*). In Latin, 1596, 1597, 1617; in German, 1597, 1619.

VII. *Schmidel's Brazil.* In Latin, 1599, 1625; in German, 1597, 1600, 1617.

VIII. *Drake, Candish, and Ralegh.* In Latin, 159 (twice), 1625; in German, 1599, 1624.

IX. *Acosta*, etc. In Latin, 1602, 1633; in German, probably 1601; "additamentum," 1602; and again entire after 1620.

X. *Vespucius, Hamor, and John Smith.* In Latin, 1619 (twice); in German, 1618.

XI. *Schouten and Spilbergen.* In Latin, 1619, — appendix, 1620; in German, 1619, — appendix, 1620.

XII. *Herrera.* In Latin, 1624; in German, 1623.

XIII. *Miscellaneous,* — *Cabot*, etc. In Latin, 1634 in German, the first seven sections in 1627 (sometime 1628); and sections 8–15 in 1630.

Elenchus: Historia Americæ sive Novus orbis, 163 (three issues). This is a table of the Contents to the editio which Merian was selling in 1634 under a collective title.

The foregoing enumeration makes no recognition of the almost innumerable varieties cause by combination, which sometimes pass for ne editions. Some of the editions of the same date are usually called "counterfeits;" and there are doubts, even, if some of those here named reall deserve recognition as distinct editions.[2]

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[1] The earliest description of a set of De Bry of any bibliographical moment is that of the Abbé d Rothelin, *Observations et détails sur la collection des voyages*, etc. (Paris, 1742), pp. 44 (Carter-Brown, vol. i no. 473), which is reprinted in Lenglet du Fresnoy's *Méthode pour étudier la géographie* (1768), i. 324 Gabriel Martin, in his catalogue of the library of M. Cisternay du Fay, had somewhat earlier announced tha collector's triumph in calling a set in his catalogue (no. 2,825) "exemplum omni genere perfectum," when hi copy brought 450 francs. The Abbé de Rothelin aimed to exceed Cisternay du Fay, and did in the varieties which he brought together. The next description was that of De Bure in his *Bibliographie instructive* (vol. i p. 67), printed 1763–1768; but the German editions were overlooked by De Bure, as they had been by his prede cessors. The *Carter-Brown Catalogue* (vol. i. no. 473) shows Sobolewski's copy of De Bure with manuscrip notes. A lifetime later, in 1802, A. G Camus printed at Paris his *Mémoire sur les grands et petits voyage* [de De Bry] *et les voyages de Thevenot.* As a careful and critical piece of work, this collation of Camus wa superior to De Bure's. A description of a copy belonging to the Duke of Bedford was printed in Paris in 183 (6 pp.). Weigel, in the *Serapeum* (1845), pp. 65–89, printed his "Bibliographische Mittheilungen über di deutschen Ausgaben von De Bry," which was also printed separately. It described a copy now owned in Ne York. Muller, in his *Catalogue* (1872), p. 217, indicates some differences from Weigel's collations. The cop formed by De Bure fell into Mr. Grenville's hands, and was largely improved by him before he left it, wit his library, to the British Museum. The *Bibliotheca Grenvilliana* describes it, and Bartlett (*Carter-Brow Catalogue*, i. 321) thinks it the finest in Europe. Cf. Dibdin's description, which is copied in the *America Bibliopolist* (1872), p. 13 The standard collation at present is probably that of Brunet, in his *Manue du libraire*, vol. i. (1860), which was also printed separately; in this he follows Weigel for the German texts This account is followed by Sabin in his *Dictionary* (vol. iii. p. 20), whose article, prepared by Charles A Cutter, of the Boston Athenæum, has also been printed separately. The Brunet account is accompanied by valuable note (also in Sabin, iii. 59), by Sobolewski, whose best set (reaching one hundred and seventy parts was a wonderful one, though he lacked the English Hariot. This set came to this country through Mulle (cf. his *Catalogue*, 1875, p. 387), and is now in the Lenox Library. Sobolewski's second set went into the Field Collection, and was sold in 1875; and again in the J. J. Cooke sale (*Catalogue*, iii. 297) in 1883. Cf. *Catalogue de la collection de feu M. Serge Sobolewski de Moscou*, prepared by Albert Cohn. The sale took place in Leipsic in July, 1873. Brunet and Sobolewski both point out the great difficulties of a satisfactor collation, arising from the publisher's habit of mixing the sheets of the various editions, forming varieties almost beyond the acquisition of the most enthusiastic collector, "so that," says Brunet, "perhaps no tw copies of this work are exactly alike." "No man ever yet," says Henry Stevens (*Historical Collections*, vol. i. no. 179), "made up his De Bry perfect, if one may count on the three great De Bry witnesses, — the Right Honorable Thomas Grenville, the Russian prince Sobolewski, and the American Mr. Lenox, — who all went far beyond De Bure, yet fell far short of attaining all the variations they had heard of." The collector will value various other collations now accessible, like that in the *Carter-Brown Catalogue*, vol. i. no. 396 (also printed separately, twenty-five copies, in 1875); that printed by Quaritch, confined to the German texts; that in the *Huth Catalogue*, ii. 404; and that in the *Sunderland Catalogue*, nos. 2,052, 2,053.

[2] There are lists of the sets which have been sold since 1709 given in Sabin (vol. iii. p. 47), from Brunet, and in the *Carter-Brown Catalogue* (vol. i. p. 408). The Rothelin copy, then esteemed the best known, brought, in 1746, 750 francs. At a later day, with additions secured under better knowledge, it again changed hands at 2,551

While there is distinctive merit in De Bry's collection, which caused it to have a due effect in its day on the progress of geographical knowledge,[1] it must be confessed that a certain meretricious reputation has become attached to the work as the test of a collector's assiduity, and of his supply of money, quite disproportioned to the relative use of the collection in these days to a student. This artificial appreciation has no doubt been largely due to the engravings, which form so attractive a feature in the series, and which, while they in many cases are the honest rendering of genuine sketches, are certainly in not a few the merest fancy of some designer.[2]

There are several publications of the De Brys sometimes found grouped with the *Voyages* as a part, though not properly so, of the series. Such are Las Casas' *Narratio regionum Indicarum;* the voyages of the "Silberne Welt," by Arthus von Dantzig, and of Olivier van Noort;[3] the *Rerum et urbis Amstelodamensium historia* of Pontanus, with its Dutch voyages to the north; and the *Navigations aux Indes par les Hollandois.*[4]

Another of De Bry's editors, Gasper Ens, published in 1680 his *West-unnd-Ost Indischer Lustgart*, which is a summary of the sources of American history.[5]

There are various abridgments of De Bry. The earliest is Ziegler's *America*, Frankfort, 1614,[6] which is made up from the first nine parts of the German *Grands Voyages*. The *Historia antipodum, oder Newe Welt* (1631), is the first twelve parts condensed by Johann Ludwig Gottfried, otherwise known as Johann Phillippe Abelin, who was, in Merian's day, a co-laborer on the *Voyages*. He uses a large number of the plates from the larger work.[7] The chief rival collection of De Bry is that of Hulsius, which is described elsewhere.[8]

Collections now became numerous. Conrad Löw's *Meer oder Seehanen Buch* was published at Cologne in 1598.[9] The Dutch Collection of Voyages, issued by Cornelius Claesz, appeared in uniform style between 1598 and 1603, but it never had a collective title. It gives the voyages of Cavendish and Drake.[10]

It was well into the next century (1613) when Purchas began his publications, of which there

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francs, and once more, in 1855 (described in the *Bulletin du bibliophile*, 1855, pp. 38–41), Mr. Lenox bought it for 12,000 francs; and in 1873 Mr. Lenox also bought the best Sobolewski copy (fifty-five volumes) for 5,050 thalers. With these and other parts, procured elsewhere, this library is supposed to lead all others in the facilities for a De Bry bibliography. Fair copies of the *Grands voyages* in Latin, in first or second editions, are usually sold for about £100, and for both voyages for £150, and sometimes £200. Muller, in 1872, held the fourteen parts, in German, of the *Grands voyages*, at 1,000 florins. Fragmentary sets are frequently in the Catalogues, but bring proportionately much less prices. In unusually full sets the appreciation of value is rapid with every additional part. Most large American libraries have sets of more or less completeness. Besides those in the Carter-Brown (which took thirty years to make, besides a duplicate set from the Sobolewski sale) and Lenox libraries, there are others in the Boston Public, Harvard College, Astor, and Long Island Historical Society libraries, — all of fair proportions, and not unfrequently in duplicate and complemental sets. The copy of the Great Voyages, in Latin (all first editions), in the Murphy Library (*Catalogue*, no. 379), was gathered for Mr. Murphy by Obadiah Rich. The Murphy Library also contained the German text in first editions. In 1884 Quaritch offered the fine set from the Hamilton Library (twenty-five parts), "presumed to be quite perfect," for £670. The Earl of Crawford and Balcarres is about publishing his bibliography of De Bry.

[1] There are somewhat diverse views on this point expressed by Brunet and in the Grenville Catalogue.

[2] Reference has been made elsewhere (Vol. III. pp. 123, 164) to sketches, now preserved as a part of the Grenville copy of De Bry in the British Museum, which seem to have been the originals from which De Bry engraved the pictures in Hariot's *Virginia*, etc. These were drawn by Wyth, or White. A collection of twenty-four plates of such, from De Bry, were published in New York in 1841 (*Field's Indian Bibliography*, no. 1,701). Cf. *Amer. Antiq. Soc. Proc.*, Oct. 20, 1866, for other of De Bry's drawings in the British Museum. De Bry's engravings have been since copied by Picard in his *Cérémonies et coutumes religieuses des peuples idolatres* (Amsterdam, 1723), and by others. Exception is taken to the fidelity of De Bry's engravings in the parts on Columbus; cf. Navarrete, French translation, i. 320.

[3] Carter-Brown, vol. i. nos. 453, 454, 455.

[4] Rich (1832), £5 5*s*. Cf. P. A. Tiele's *Mémoire bibliographique sur les journaux des navigateurs Néerlandais réimprimés dans les collections de De Bry et de Hulsius*, Amsterdam, 1867.

[5] Stevens (1870), no. 668; Sabin, vi. 211.

[6] Carter-Brown, vol. i. no. 456; vol. ii. no. 198; Muller (1875), p. 389.

[7] Carter-Brown, vol. i. nos. 457, 458; vol. ii. nos. 373, 791. There was a second edition in 1655. Cf. Muller (1872), no. 636; Sabin, vol. i. no. 50; iii. 59; Huth, ii. 612. Abelin also edited the first four volumes (covering 1617–1643) of the *Theatrum Europeum* (Frankfort, 1635), etc., which pertains incidentally to American affairs (Muller, 1872, no. 1,514). Fitzer's *Orientalische Indien* (1628) and Arthus's *Historia Indiæ orientalis* (1608) are abridgments of the *Small Voyages*.

[8] Vol. IV. p. 442.

[9] Sabin, vol. x. no. 42,392; Carter-Brown, vol. i. no. 530.

[10] Muller (1872), no. 1,867.

is an account elsewhere.[1] Hieronymus Megiser's *Septentrio novantiquus* was published at Leipsic in 1613. In a single volume it gave the Zeni and later accounts of the North, besides narratives pertaining to New France and Virginia.[2] The *Journalen van de Reysen op Oostindie* of Michael Colijn, published at Amsterdam in 1619, is called by Muller[3] the first series of voyages published in Dutch with a collective title. It includes, notwithstanding the title, Cavendish, Drake, and Raleigh. Another Dutch folio, Herckmans' *Der Zeevaert lof*, etc. (Amsterdam, 1634), does not include any American voyages.[4] The celebrated Dutch collection, edited by Isaac Commelin, at Amsterdam, and known as the *Begin en Voortgangh van de Oost-Indische Compagnie*, would seem originally to have included, among its voyages to the East and North,[5] those of Raleigh and Cavendish; but they were later omitted.[6]

The collection of Thevenot was issued in 1663; but this has been described elsewhere.[7] The collection usually cited as Dapper's was printed at Amsterdam, 1669–1729, in folio (thirteen volumes). It has no collective title, but among the volumes are two touching America, — the *Beschrijvinge* of Montanus,[8] and Nienhof's *Brasiliaansche Zee-en Lantreize*.[9] A small collection, *Recueil de divers voyages faits en Africa et en l'Amérique*,[10] was published in Paris by Billaine in 1674. It includes Blome's Jamaica, Laborde on the Caribs, etc. Some of the later American voyages were also printed in the second edition of a Swedish *Reesa-book*, printed at Wysingzborg in 1674, 1675.[11] The Italian collection, *Il genio vagante*, was printed at Parma in 1691-1693, in four volumes.

An Account of Several Voyages (London, 1694) gives Narborough's to Magellan's Straits, and Marten's to Greenland.

The important English *Collection of Voyages and Travels* which passes under the name of its publisher, Churchill, took its earliest form in 1704, appearing in four volumes; but was afterwards increased by two additional volumes in 1733, and by two more in 1744, — these last, sometimes called the *Oxford Voyages*, being made up from material in the library of the Earl of Oxford. It was reissued complete in 1752. It has an introductory discourse by Caleb Locke; and this, and some other of its contents, constitutes the *Histoire de la navigation*, Paris, 1722.[12]

John Harris, an English divine, had compiled a *Collection of Voyages* in 1702 which was a rival of Churchill's, differing from it in being an historical summary of all voyages, instead of a collection of some. Harris wrote the Introduction; but it is questionable how much else he had to do with it.[13] It was revised and reissued in 1744–1748 by Dr. John Campbell, and in this form it is often regarded as a supplement to Churchill.[14] It was reprinted in two volumes, folio, with continuations to date, in 1764.[1]

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[1] Vol. III. p. 47. Cf. Carter-Brown, vol. ii. nos. 159, 169, 189, 223, 308, 330, 397. Sobolewski's copy was in the Menzies sale (no. 1,649). Quaritch's price is from £75 to £100, according to condition, which is the price of good copies in recent sales.

[2] Muller (1872), no. 2,067.

[3] *Catalogue* (1875), no. 3,284; (1877), no. 1,627; Tiele, no. 1.

[4] Muller (1872), no. 1,837.

[5] This collection also includes the voyages of Barentz, and of Hudson, as well as several through Magellan's Straits, with Madriga's voyage to Peru and Chili.

[6] The collection, as it is known, is sometimes dated 1644 and 1645, but usually 1646 (Muller, 1872, no. 1,871; Tiele, *Mémoire bibliographique*, p. 9; Carter-Brown, vol. ii. nos. 567, 586; Sabin, iv. 315, 316). A partial English translation appeared in London in 1703 (Muller, 1872, no. 1,886). The *Oost-Indische Voyagien*, issued at Amsterdam in 1648 by Joost Hartgers, is a reprint of part of Commelin, with some additions. Only one volume was printed; but Muller thinks (1872 *Catalogue*, no. 1877) that some separate issues (1649–1651), including Vries's voyage to Virginia and New Netherland, were intended to make part of a second volume. Cf. Sabin, viii. 118; Stevens, *Nuggets*, no. 1,339.

[7] Vol. IV. p. 219.

[8] The original of Ogilby's *America*: cf. Vol. III. p. 416.

[9] Muller (1872), no. 1,884. Another Dutch publication, deserving of a passing notice, which, though not a collection of voyages, enlarges upon the heroes of such voyages, is the *Leeven en Daden der doorluchtigste Zee-helden* (Amsterdam, 1676), by Lambert van den Bos, which gives accounts of Columbus, Vespucius, Magellan, Drake, Cavendish, the Zeni, Cabot, Cortereal, Frobisher, and Davis. There was a German translation at Nuremberg in 1681 (Carter-Brown, vol. ii. no. 1,149; Stevens, 1870, no. 231).

[10] Carter-Brown, vol. ii. no. 1,111. A second edition was printed by the widow Cellier in Paris in 1683 (Muller, 1875, p. 395), containing the same matter differently arranged.

[11] An earlier edition (1667) did not have them (Muller, 1875, p. 394). Capel's *Vorstellungen des Norden* (Hamburg, 1676) summarizes the voyages of the Zeni, Hudson, and others to the Arctic regions.

[12] Sabin, iv. 68; Carter-Brown, vol. iii. no. 50. It includes in the later editions Castell's description of America, with other of the Harleian manuscripts, and gives Ferdinand Columbus' life of his father.

[13] *Historical Magazine*, i. 125.

[14] Allibone; Bohn's *Lowndes*, etc.

The well-known Dutch collection (*Voyagien*) of Vander Aa was printed at Leyden in 1706, 1707. It gives voyages to all parts of the world made between 1246 and 1693. He borrows from Herrera, Acosta, Purchas, De Bry, and all available sources, and illuminates the whole with about five hundred maps and plates. In its original form it made twenty-eight, sometimes thirty, volumes of small size, in black-letter, and eight volumes in folio, both editions being issued at the same time and from the same type. In this larger form the voyages are arranged by nations; and it was the unsold copies of this edition which, with a new general title, constitutes the edition of 1727. In the smaller form the arrangement is chronological. In the folio edition the voyages to Spanish America previous to 1540 constitute volumes three and four; while the English voyages, to 1696, are in volumes five and six.[2]

In 1707 Du Perier's *Histoire universelle des voyages* had not so wide a scope as its title indicated, being confined to the early Spanish voyages to America;[3] the proposed subsequent volumes not having been printed. An English translation, under Du Perier's name, was issued in London in 1708;[4] but when reissued in 1711, with a different title, it credited the authorship to the Abbé Bellegarde.[5] In 1711, also, Captain John Stevens published in London his *New Collection of Voyages*; but Lawson's Carolina and Cieza's Peru were the only American sections.[6] In 1715 the French collection known as Bernard's *Recueil de voiages au Nord*, was begun at Amsterdam. A pretty wide interpretation is given to the restricted designation of the title, and voyages to California, Louisiana, the Upper Mississippi (Hennepin), Virginia, and Georgia are included.[7] Daniel Coxe, in 1741, united in one volume *A Collection of Voyages*, three of which he had already printed separately, including Captain James's to the Northwest. A single volume of a collection called *The American Traveller* appeared in London in 1743.[8]

The collection known as *Astley's Voyages* was published in London in four volumes in 1745–1747; the editor was John Green, whose name is sometimes attached to the work. It gives the travels of Marco Polo, but has nothing of the early voyages to America,[9] — these being intended for later volumes, were never printed. These four volumes were translated, with some errors and omissions, into French, and constitute the first nine volumes of the Abbé Prevost's *Histoire générale des voyages*, begun in Paris in 1746, and completed, in twenty quarto volumes, in 1789.[10] An octavo edition was printed (1749–1770) in seventy-five volumes.[11] It was again reprinted at the Hague in twenty-five volumes quarto (1747–1780), with considerable revision, following the original English, and with Green's assistance; besides showing some additions. The Dutch editor was P. de Hondt, who also issued an edition in Dutch in twenty-one volumes quarto, — including, however, only the first seventeen volumes of his French edition, thus omitting those chiefly concerning America.[12] A small collection of little moment, *A New Universal Collection of Voyages*, appeared in London in 1755.[13] De Brosses' *Histoire des navigations aux terres australes depuis 1501* (Paris, 1756), two volumes quarto, covers Vespucius, Magellan, Drake, and Cavendish.[14]

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[1] Carter-Brown, vol. iii. no. 1,400; Sabin, viii. 92; Muller (1872), no. 1,901.

[2] H. H. Bancroft, *Central America*, ii. 745, who errs somewhat in his statements; *Murphy Catalogue*, no. 1,074; Carter-Brown, vol. iii. no. 88, with full table of contents. The best description is in Muller (1872), no. 1,887. Although Vander Aa says, in the title of the folio edition, that it is based on the Gottfriedt-Abelin *Newe Welt*, this new collection is at least four times as extensive.

[3] Carter-Brown, vol. iii. no. 96.

[4] Carter-Brown, iii. 110.

[5] Carter-Brown, iii. 150.

[6] The publication began in numbers in 1708, and some copies are dated 1710 (Carter-Brown, vol. iii. no. 158).

[7] Carter-Brown, vol. iii. no. 208, in ten vols., 1715–1718. H. H. Bancroft (*Central America*, ii. 749), cites an edition (1715–1727) in nine vols. Muller (1870, no. 2,021) cites an edition, ten vols., 1731–1738.

[8] Sabin, vol. i. no. 1,250.

[9] Carter-Brown, vol. iii. no. 792; H. H. Bancroft, *Central America*, ii. 747.

[10] Volumes xii. to xv. are given to America; the later volumes were compiled by Querlon and De Leyre.

[11] Different sets vary in the number of volumes.

[12] Muller (1872), nos. 1,895–1,900; Carter-Brown, vol. iii. no. 831; H. H. Bancroft, *Central America*, ii. 746. A German translation appeared at Leipsic in 1747 in twenty-one volumes.

[13] H. H. Bancroft, *Central America*, ii. 750.

[14] Muller (1872), nos. 1 980, 1,981. There was a German translation, with enlargements, by J. C. Adelung, Halle, 1767; an English translation is also cited. A similar range was taken in Alexander Dalrymple's *Historical Collection of Voyages in the South Pacific Ocean* (London, 1770), of which there was a French translation in 1774 (Carter-Brown, vol. iii. no. 1,730). The most important contribution in English on this

Several English collections appeared in the next few years; among which are *The World Displayed* (London, 1759–1761), twenty vols. 16mo, — of which seven volumes are on American voyages, compiled from the larger collections,[1] — and *A Curious Collection of Travels* (London, 1761) is in eight volumes, three of which are devoted to America.[2]

The Abbé de la Porte's *Voyageur François*, in forty-two volumes, 1765–1795 (there are other dates), may be mentioned to warn the student of its historical warp with a fictitious woof.[3] John Barrows' *Collection of Voyages* (London, 1765), in three small volumes, was translated into French by Targe under the title of *Abrégé chronologique*. John Callender's *Voyages to the Terra australis* (London, 1766–1788), three volumes, translated for the first time a number of the narratives in De Bry, Hulsius, and Thevenot. It gives the voyages of Vespucius, Magellan, Drake, Galle, Cavendish, Hawkins, and others.[4] Dodsley's *Compendium of Voyages* was published in the same year (1766) in seven volumes.[5] The *New Collection of Voyages*, generally referred to as Knox's, from the publisher's name, appeared in seven volumes in 1767, the first three volumes covering American explorations.[6] In 1770 Edward Cavendish Drake's *New Universal Collection of Voyages* was published at London. The narratives are concise, and of a very popular character.[7] David Henry, a magazinist of the day, published in 1773–1774 *An Historical Account of all the Voyages Round the World by English Navigators*, beginning with Drake and Cavendish.[8]

La Harpe issued in Paris, 1780–1801, in thirty-two volumes, — Comeyras editing the last eleven, — his *Abrégé de l'histoire générale des voyages*, which proved a more readable and popular book than Prévost's collection. There have been later editions and continuations.[9]

Johann Reinhold Forster made a positive contribution to this field of compilation when he printed his *Geschichte der Entdeckungen und Schifffahrten im Norden* at Frankfort in 1785.[10] He goes back to the earliest explorations, and considers the credibility of the Zeno narrative. He starts with Gomez for the Spanish section. A French collection by Berenger, *Voyages faits autour du monde* (Paris, 1788–1789), is very scant on Magellan, Drake, and Cavendish. A collection was published in London (1789) by Richardson on the voyages of the Portuguese and Spaniards during the fifteenth and sixteenth centuries. Mavor's *Voyages, Travels, and Discoveries* (London, 1796–1802), twenty-five volumes, is a condensed treatment, which passed to other editions in 1810 and 1813–1815.

A standard compilation appeared in John Pinkerton's *General Collection of Voyages* (London, 1808–1814), in seventeen volumes,[11] with over two hundred maps and plates, repeating the essential English narratives of earlier collections, and translating those from foreign languages afresh, preserving largely the language of the explorers. Pinkerton, as an editor, was learned, but somewhat pedantic and over-confident; and a certain agglutinizing habit indicates a process of amassment rather than of selection and assimilation. Volumes xii., xiii., and xiv. are given to America; but the operations of the Spaniards on the main, and particularly on the Pacific coast of North America, are rather scantily chronicled.[12]

In 1808 was begun, under the supervision of Malte-Brun and others, the well-known *Annales des voyages*, which was continued to 1815, making twenty-five volumes. A new series, *Nouvelles annales des voyages*, was begun in 1819. The whole work is an important gathering of original sources and learned comment, and is in considerable part devoted to America. A French *Collection abrégée des voyages*, by Bancarel, appeared in Paris in 1808–1809, in twelve volumes.

The Collection of the best Voyages and Travels, compiled by Robert Kerr, and published in Edinburgh in 1811–1824, in eighteen octavo volumes, is a useful one, though the scheme was not wholly carried out. It includes an historical essay on the progress of navigation and discovery by W. Stevenson. It also includes among others the Northmen and Zeni voyages, the travels of Marco Polo and Galvano, the African discoveries of the Portuguese. The voyages of Columbus and his successors begin in vol. iii.;

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subject, however, is in Dr. James Burney's *Chronological History of Discovery in the South Sea* (1803–1817), five volumes quarto.

[1] Dr. Johnson wrote the Introduction; there was a third edition in 1767 (Bohn's *Lowndes*, p. 2994).

[2] H. H. Bancroft, *Central America*, ii. 750.

[3] H. H. Bancroft, *Central America*, ii. 754.

[4] Carter-Brown, vol. iii. no. 1,494.

[5] Sabin, v. 473; H. H. Bancroft, *Central America*, ii. 750.

[6] Sabin, ix. 529; Carter-Brown, vol. iii. no. 1,602; H. H. Bancroft, *Central America*, ii. 750.

[7] Carter-Brown, vol. iii. no. 1,733; H. H. Bancroft, *Central America*, ii. 751.

[8] H. H. Bancroft, *Central America*, ii. 751; Allibone.

[9] H. H. Bancroft, *Central America*, ii. 749.

[10] H. H. Bancroft, *Central America*, ii. 752.

[11] There was a quarto reprint in Philadelphia of a part of it in 1810–1812.

[12] There is a catalogue of voyages and an index in vol. xvii. Cf Allibone's *Dictionary*.

and the narratives of these voyages are continued through vol. vi., though those of Drake, Cavendish, Hawkins, Davis, Magellan, and others come later in the series.

The *Histoire générale des voyages*, undertaken by C. A. Walkenaer in 1826, was stopped in 1831, after twenty-one octavos had been printed, without exhausting the African portion.

The early Dutch voyages are commemorated in Bennet and Wijk's *Nederlandsche Ontdekkingen in America*, etc., which was issued at Utrecht in 1827,[1] and in their *Nederlandsche Zeereizen*, printed at Dordrecht in 1828–1830, in five volumes octavo. It contains Linschoten, Hudson, etc.

Albert Montémont's *Bibliothèque universelle des voyages* was published in Paris, 1833–1836, in forty-six volumes.

G. A. Wimmer's *Die Enthüllung des Erdkreises* (Vienna, 1834), five volumes octavo, is a general summary, which gives in the last two volumes the voyages to America and to the South Seas.[2]

In 1837 Henri Ternaux-Compans began the publication of his *Voyages, relations, et mémoires originaux pour servir à l'histoire de la découverte de l'Amérique*, of which an account is given on another page (see p. vi).

The collection of F. C. Marmocchi, *Raccolta di viaggi dalla scoperta del Nuevo Continente*, was published at Prato in 1840–1843, in five volumes; it includes the Navarrete collection on Columbus, Xeres on Pizarro, and other of the Spanish narratives.[3] The last volume of a collection in twelve volumes published in Paris, *Nouvelle bibliothèque des voyages*, is also given to America.

The Hakluyt Society in London began its valuable series of publications in 1847, and has admirably kept up its work to the present time, having issued its volumes generally under satisfactory editing. Its publications are not sold outside of its membership, except at second hand.[4]

Under the editing of José Ferrer de Couto and José March y Labores, and with the royal patronage, a *Historia de la marina real Española* was published in Madrid, in two volumes, 1849 and 1854. It relates the early voyages.[5] Édouard Charton's *Voyageurs anciens et modernes* was published in four volumes in Paris, 1855–1857; and it passed subsequently to a new edition.[6]

A summarized account of the Portuguese and Spanish discoveries, from Prince Henry to Pizarro, was published in German by Theodor Vogel, and also in English in 1877.

A *Nouvelle histoire des voyages*, by Richard Cortambert, is the latest and most popular presentation of the subject, opening with the explorations of Columbus and his successors; and Édouard Cat's *Les grandes découvertes maritimes du treizième au seizième siècle* (Paris, 1882) is another popular book.

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[1] Stevens, *Bibliotheca geographica*, no. 317.

[2] Muller (1872), no. 1,842.

[3] Muller (1875), no. 3,303.

[4] Complete sets are sometimes offered by dealers at £30 to £35.

[5] H. H. Bancroft, *Central America*, ii. 757.

[6] A Spanish translation of the modern voyages by Urrabieta was published in Paris in 1860–1861. The Spanish *Enciclopedia de viajes modernos* (Madrid, 1859), five volumes, edited by Fernandez Cuesta, refers to the later periods (H. H. Bancroft, *Central America*, ii. 758).

NARRATIVE AND CRITICAL

HISTORY OF AMERICA

CHAPTER I.

THE GEOGRAPHICAL KNOWLEDGE OF THE ANCIENTS CONSIDERED IN RELATION TO THE DISCOVERY OF AMERICA.

BY WILLIAM H. TILLINGHAST,

Assistant Librarian of Harvard University.

AS Columbus, in August, 1498, ran into the mouth of the Orinoco, he little thought that before him lay, silent but irrefutable, the proof of he futility of his long-cherished hopes. His gratification at the complete-ess of his success, in that God had permitted the accomplishment of all is predictions, to the confusion of those who had opposed and derided im, never left him; even in the fever which overtook him on the last voy-ge his strong faith cried to him, "Why dost thou falter in thy trust in od? He gave thee India!" In this belief he died. The conviction that ayti was Cipangu, that Cuba was Cathay, did not long outlive its author; he discovery of the Pacific soon made it clear that a new world and another ea lay between the landfall of Columbus and the goal of his endeavors.

The truth, when revealed and accepted, was a surprise more profound to he learned than even the error it displaced. The possibility of a short pas-age westward to Cathay was important to merchants and adventurers, tartling to courtiers and ecclesiastics, but to men of classical learning it as only a corroboration of the teaching of the ancients. That a barrier to uch passage should be detected in the very spot where the outskirts of sia had been imagined, was unexpected and unwelcome. The treasures f Mexico and Peru could not satisfy the demand for the products of the ast; Cortes gave himself, in his later years, to the search for a strait which ight yet make good the anticipations of the earlier discoverers. The new terpretation, if economically disappointing, had yet an interest of its own. hence came the human population of the unveiled continent? How had s existence escaped the wisdom of Greece and Rome? Had it done so? learly, since the whole human race had been renewed through Noah, the red men of America must have descended from the patriarch; in some way, at some time, the New World had been discovered and populated from the Old. Had knowledge of this event lapsed from the minds of men before their memories were committed to writing, or did reminiscences exist in ancient literatures, overlooked, or misunderstood by modern ignorance? Scholars were not wanting, nor has their line since wholly failed, who freely devoted their ingenuity to the solution of these questions, but with a success so diverse in its results, that the inquiry is still pertinent, especially since the pursuit, even though on the main point it end in reservation of judgment, enables us to understand from what source and by what channels the inspiration came which held Columbus so steadily to his westward course.

Although the elder civilizations of Assyria and Egypt boasted a cultivation of astronomy long anterior to the heroic age of Greece, their cosmographical ideas appear to have been rude and undeveloped, so that whatever the Greeks borrowed thence was of small importance compared with what they themselves ascertained. While it may be doubted if decisive testimony can be extorted from the earliest Grecian literature, represented chiefly by the Homeric and Hesiodic poems, it is probable that the people among whom that literature grew up had not gone, in their conception o the universe, beyond simple acceptance of the direct evidence of thei senses. The earth they looked upon as a plane, stretching away from the Ægean Sea, the focus of their knowledge, and ever less distinctly known until it ended in an horizon of pure ignorance, girdled by the deep-flowing current of the river Oceanus. Beyond Oceanus even fancy began to fail there was the realm of dust and darkness, the home of the powerless spirits of the dead; there, too, the hemisphere of heaven joined its brother hemisphere of Tartarus.[1] This conception of the earth was not confined to Homeric times, but remained the common belief throughout the course o Grecian history, underlying and outlasting many of the speculations of th philosophers.

That growing intellectual activity which was signalized by a notable development of trade and colonization in the eighth century, in the seventh awoke to consciousness in a series of attempts to formulate the condition of existence. The philosophy of nature thus originated, wherein the testimony of nature in her own behalf was little sought or understood, bega with the assumption of a flat earth, variously shaped, and as variously supported. To whom belongs the honor of first propounding the theory of th spherical form of the earth cannot be known. It was taught by the Italia Pythagoreans of the sixth century, and was probably one of the doctrine of Pythagoras himself, as it was, a little later, of Parmenides, the founder of the Eleatics.[1]

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[1] The plane earth cut the cosmic sphere like a diaphragm, shutting the light from Tartarus.

ἀυτὰρ ὕπερθεν
γῆς ῥίζαι πεφύασι καὶ ἀτρυγέτοιο θαλάσσης.
(Hesiod, *Theog.* 727.)

"and above
Impend the roots of earth and barren sea."
(*The remains of Hesiod the Ascræan*, etc., translated b
C. A. Elton, 2d ed. London, 1815.)

Critics differ as to the age of the vivid description of Tartarus in the Theogony.

In neither case can there be a claim for scientific discovery. The earth was a sphere because the sphere was the most perfect form; it was at the centre of the universe because that was the place of honor; it was motionless because motion was less dignified than rest.

Plato, who was familiar with the doctrines of the Pythagoreans, adopted their view of the form of the earth, and did much to popularize it among his countrymen.[2] To the generation that succeeded him, the sphericity of the earth was a fact as capable of logical demonstration as a geometrical theorem. Aristotle, in his treatise "On the Heaven," after detailing the views of those philosophers who regarded the earth as flat, drum-shaped, or cylindrical, gives a formal summary of the grounds which necessitate the assumption of its sphericity, specifying the tendency of all things to seek the centre, the unvarying circularity of the earth's shadow at eclipses of the moon, and the proportionate change in the altitude of stars resulting from changes in the observer's latitude. Aristotle made the doctrine orthodox; his successors, Eratosthenes, Hipparchus, and Ptolemy, constituted it an inalienable possession of the race. Greece transmitted it to Rome, Rome impressed it upon barbaric Europe; taught by Pliny, Hyginus, Manilius, expressed in the works of Cicero, Virgil, Ovid, it passed into the schoolbooks of the Middle Ages, whence, reinforced by Arabian lore, it has come down to us.[3]

That the belief ever became in antiquity or in the Middle Ages widely spread among the people is improbable; it did not indeed escape opposition among the educated; writers even of the Augustan age sometimes appear in doubt.[4]

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[1] Pythagoras has left no writings; Aristotle speaks only of his school; Diogenes Laertius in one passage (*Vitae*, viii. 1 (Pythag.), 25) quotes an authority to the effect that Pythagoras asserted the earth to be spherical and inhabited all over, so that there were antipodes, to whom that is *over* which to us is *under*. As all his disciples agreed on the spherical form of the earth while differing as to its position and motion, it is probable that they took the idea of its form from him. Diogenes Laertius states that Parmenides called the earth round (στρογγύλη, viii. 48), and also that he spoke of it as spherical (σφαιροειδῆ, ix. 3); the passages are not, as has been sometimes assumed, contradictory. The enunciation of the doctrine is often attributed to Thales and to Anaximander, on the authority of Plutarch, *De placitis philosophorum*, iii. 10, and Diogenes Laertius, ii. 1, respectively; but the evidence is conflicting (Simplicius, *Ad Aristot.*, p. 506$^{b.}$ ed. Brandis; Aristot., *De caelo*, ii. 13; Plutarch, *De plac. phil.* iii., xv. 9).

[2] Plato, *Phaedo*, 109. Schaefer is in error when he asserts (*Entwicklung der Ansichten der Alten ueber Gestalt und Grösse der Erde*, 16) that Plato in the *Timaeus* (55, 56) assigns a cubical form to the earth. The question there is not of the shape of the earth, the planet, but of the form of the constituent atoms of the element earth.

[3] Terra pilae similis, nullo fulcimine nixa,
  Aëre subjecto tam grave pendet onus.
[Ipsa volubilitas libratum sustinet orbem:
  Quique premit partes, angulus omnis abest.
Cumque sit in media rerum regione locata,
  Et tangat nullum plusve minusve latus;
Ni convexa foret, parti vicinior esset,
  Nec medium terram mundus haberet onus.]
Arte Syracosia suspensus in aëre clauso
  Stat globus, immensi parva figura poli;
Et quantum a summis, tantum secessit ab imis
  Terra. Quod ut fiat, forma rotunda facit.
    (Ovid, *Fasti*, vi. 269–280.)

The bracketed lines are found in but a few MSS. The last lines refer to a globe said to have been constructed by Archimedes.

[4] Plato makes Socrates say that he took up the works of Anaxagoras, hoping to learn

The sphericity of the earth once comprehended, there follow certain corollaries which the Greeks were not slow to perceive. Plato, indeed, who likened the earth to a ball covered with party-colored strips of leather, gives no estimate of its size, although the description of the world in the *Phaedo* seems to imply immense magnitude;[1] but Aristotle states that mathematicians of his day estimated the circumference at 400,000 stadia,[2] and Archimedes puts the common reckoning at somewhat less than 300,000 stadia.[3] How these figures were obtained we are not informed. The first measurement of the earth which rests on a known method was that made about the middle of the third century B. C., by Eratosthenes, the librarian at Alexandria, who, by comparing the estimated linear distance between Syene, under the tropic, and Alexandria with their angular distance, as deduced from observations on the shadow of the gnomon at Alexandria, concluded that the circumference of the earth was 250,000 or 252,000 stadia.[4] This result, owing to an uncertainty as to the exact length of the stade used in the computation, cannot be interpreted with confidence, but if we assume that it was in truth about twelve per cent. too large, we shall probably not be far out of the way.[5] Hipparchus, in many matters

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whether the earth was round or flat (*Phaedo*, 46, Stallb. i. 176). In Plutarch's dialogue "*On the face appearing in the orb of the moon*," one of the characters is lavish in his ridicule of the sphericity of the earth and of the theory of antipodes. See also Lucretius, *De rerum nat.*, i. 1052, etc., v. 650; Virgil, *Georgics*, i. 247; Tacitus, *Germania*, 45.

[1] That extraordinary picture could, however, hardly have been intended for an exposition of the actual physical geography of the globe.

[2] Aristotle, *De caelo*, ii. 15.

[3] Archimedes, *Arenarius*, i. 1, ed. Helbig. Leipsic, 1881, vol. ii. p. 243.

[4] The logical basis of Eratosthenes's work was sound, but the result was vitiated by errors of fact in his assumptions, which, however, to some extent counterbalanced one another. The majority of ancient writers who treat of the matter give 252,000 stadia as the result, but Cleomedes (*Circ. doctr. de subl.*, i. 10) gives 250,000. It is surmised that the former number originated in a desire to assign in round numbers 700 stadia to a degree. Forbiger, *Handbuch der alten Geographie*, i. 180, n. 27.

[5] The stadium comprised six hundred feet, but the length of the Greek foot is uncertain; indeed, there were at least two varieties, the Olympic and the Attic, as in Egypt there was a royal and a common ell, and a much larger number of supposititious feet (and, consequently, stadia) have been discovered or invented by metrologists. Early French scholars, like Ramé de l'Isle, D'Anville, Gosselin, supposed the true length of the earth's circumference to be known to the Greeks, and held that all the estimates which have come down to us were expressions of the same value in different stadia. It is now generally agreed that these estimates really denote different conceptions of the size of the earth, but opinions still differ widely as to the length of the stadium used by the geographers. The value selected by Peschel (*Geschichte der Erdkunde*, 2d ed., p. 46) is that likewise adopted by Hultsch (*Griechische und Römische Metrologie*, 2d ed., 1882) and Muellenhof (*Deutsche Alterthumskunde*, 2d ed., vol. i.). According to these writers, Eratosthenes is supposed to have devised as a standard geographical measure a stadium composed of feet equal to one half the royal Egyptian ell. According to Pliny (*Hist. Nat.*, xii. 14, § 5), Eratosthenes allowed forty stadia to the Egyptian schonus; if we reckon the schonus at 12,000 royal ells, we have stadium $= \frac{12{,}000}{40} \times .525^{m} = 157.5^{m}$. This would give a degree equal to $110{,}250^{m}$, the true value being, according to Peschel, $110{,}808^{m}$. To this conclusion Lepsius (*Das Stadium und die Gradmessung des Eratosthenes auf Grundlage der Aegyptischen Masse*, in *Zeitschrift für Aegypt. Sprache u. Alterthumskunde*, xv. [1877]. See also *Die Längenmasse der Alten*. Berlin, 1884) objects that the royal ell was never used in composition, and that the schonus was valued in different parts of Egypt at 12,000, 16,000, 24,000, *small* ells. He believes that the schonus referred to by Pliny contained 16,000 small ells, so that Eratosthenes's stadium $= \frac{16{,}000}{40} \times .450^{m} = 180^{m}$

It is possible, however, that Eratosthenes did not devise a new stadium, but adopted that in current use among the Greeks, the Athenian stadium. (I have seen no evidence that the long the opponent of Eratosthenes, adopted his conclusion on this point, and was followed by Strabo,[1] by Pliny, who regarded the attempt as somewhat over-bold, but so cleverly argued that it could not be disregarded,[2] and by many others.

Fortunately, as it resulted, this over-estimate was not allowed to stand uncontested. Posidonius of Rhodes (B. C. 135–51), by an independent calculation based upon the difference in altitude of Canopus at Rhodes and at Alexandria, reached a result which is reported by Cleomedes as 240,000, and by Strabo as 180,000 stadia.[3] The final judgment of Posidonius apparently approved the smaller number; it hit, at all events, the fancy of the time, and was adopted by Marinus of Tyre and by Ptolemy,[4] whose authority imposed it upon the Middle Ages. Accepting it as an independent estimate, it follows that Posidonius allowed but 500 stadia to a degree, instead of 700, thus representing the earth as about 28 per cent. smaller than did Eratosthenes.[5]

To the earliest writers the known lands constituted the earth; they were girdled, indeed, by the river Oceanus, but that was a narrow stream whose

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Olympic stadium was in common use.) This stadium is based on the Athenian foot, which, according to the investigations of Stuart, has been reckoned at .3081^{m}, being to the Roman foot as 25 to 24. This would give a stadium of 184.8^{m}, and a degree of 129,500^{m}. Now Strabo, in the passage where he says that people commonly estimated eight stadia to the mile, adds that Polybius allowed 8⅓ stadia to the mile (*Geogr.*, vii. 7, § 4), and in the fragment known as the Table of Julian of Ascalon (Hultsch, *Metrolog. script. reliq.*, Lips., 1864, i. 201) it is distinctly stated that Eratosthenes and Strabo reckoned 8⅓ stadia to the mile. In the opinion of Hultsch, this table probably belonged to an official compilation made under the emperor Julian. Very recently W. Dörpfeld has revised the work of Stuart, and by a series of measurements of the smaller architectural features in Athenian remains has made it appear that the Athenian foot equalled .2957^{m} (instead of .3081^{m}), which is almost precisely the Roman foot, and gives a stadium of 177.4^{m}, which runs 8⅓ to the Roman mile. If this revision is trustworthy, — and it has been accepted by Lepsius and by Nissel (who contributes the article on metrology to Mueller's *Handbuch der klassischen Alterthumswissenschaft*, Nordlingen, 1886, etc.), — it seems to me probable that we have here the stadium used by Eratosthenes, and that his degree has a value of 124,180^{m} (Dörpfeld, *Beiträge zur antiken Metrologie*, in *Mittheilungen des deutschen Archaeolog. Instituts zu Athen*, vii. (1882), 277).

[1] Strabo, *Geogr.*, ii. 5, § 7; the estimate of Posidonius is only quoted hypothetically by Strabo (ii. 2, § 2).

[2] Pliny, *Hist. Nat.* ii. 112, 113. There is apparently some misunderstanding, either on the part of Pliny or his copyists, in the subsequent proposition to increase this estimate by 12,000 stadia. Schaefer's (*Philologus*, xxviii. 187) readjustment of the text is rather audacious. Pliny's statement that Hipparchus estimated the circumference at 275,000 stadia does not agree with Strabo (i. 4, § 1).

[3] The discrepancy is variously explained. Riccioli, in his *Geographia et hydrographia reformata*, 1661, first suggested the more commonly received solution. Posidonius, he thought, having calculated the arc between Rhodes and Alexandria at 1-48 of the circumference, at first assumed 5,000 stadia as the distance between these places: $5{,}000 \times 48 = 240{,}000$. Later he adopted a revised estimate of the distance (Strabo, ii. ch. v. § 24), 3,750 stadia: $3{,}750 \times 48 = 180{,}000$. Letronne (*Mém. de l'Acad. des Inscr. et Belles-Lettres*, vi., 1822) prefers to regard both numbers as merely hypothetical illustrations of the processes. Hultsch (*Griechische u. Römische Metrologie*, 1882, p. 63) follows Fréret and Gosselin in regarding both numbers as expressing the same value in stadia of different length (Forbiger, *Handbuch der alten Geographie*, i. 360, n. 29). The last explanation is barred by the positive statement of Strabo, who can hardly be thought not to have known what he was talking about: κἂν τῶν νεωτέρων δὲ ἀναμετρήσεων εἰσάγηται ἡ ἐλαχίστην ποιοῦσα τὴν γῆν, οἵαν ὁ Ποσειδώνιος ἐγκρίνει περὶ ὀκτωκαίδεκα μυριάδας οὖσαν, (*Geogr.*, ii. 2, § 2.)

[4] *Geographia*, vii. 5.

[5] $1^{\circ} = 500$ stadia = 88,700^{m}, which is about one fifth smaller than the truth.

further bank lay in fable-land.[1] The promulgation of the theory of the sphericity of the earth and the approximate determination of its size drew attention afresh to the problem of the distribution of land and water upon its surface, and materially modified the earlier conception. The increase of geographical knowledge along lines of trade, conquest, and colonization had greatly extended the bounds of the known world since Homer's day, but it was still evident that by far the larger portion of the earth, taking the smallest estimate of its size, was still undiscovered, — a fair field for speculation and fantasy.[2]

We can trace two schools of thought in respect to the configuration of this unknown region, both represented in the primitive conception of the earth, and both conditioned by a more fundamental postulate. It was a near thought, if the earth was a sphere, to transfer to it the systems of circles which had already been applied to the heavens. The suggestion is attributed to Thales, to Pythagoras, and to Parmenides; and it is certain that the earth was very early conceived as divided by the polar and solstitial circles into five zones, whereof two only, the temperate in either sphere, so the Greeks believed, were capable of supporting life; of the others, the polar were uninhabitable from intense cold, as was the torrid from its parching heat. This theory, which excluded from knowledge the whole southern hemisphere and a large portion of the northern, was approved by Aristotle and the Homeric school of geographers, and by the minor physicists. As knowledge grew, its truth was doubted. Polybius wrote a monograph, maintaining that the middle portion of the torrid zone had a temperate climate, and his view was adopted by Posidonius and Geminus, if not by Eratosthenes. Marinus and Ptolemy, who knew that commerce was carried on along the east coast of Africa far below the equator, cannot have fallen into the ancient error, but the error long persisted; it was always in favor with the compilers, and thus perhaps obtained that currency in Rome which enabled it to exert a restrictive and pernicious check upon maritime endeavor deep into the Middle Ages.[3]

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[1] Xenophanes is to be excepted, if, as M. Martin supposes, his doctrine of the infinite extent of the earth applied to its extent horizontally as well as downward.

[2] The domain of early Greek geography has not escaped the incursions of unbalanced investigators. The Greeks themselves allowed the Argonauts an ocean voyage: Crates and Strabo did valiant battle for the universal wisdom of Homer; nor are scholars lacking to-day who will demonstrate that Odysseus had circumnavigated Africa, floated in the shadow of Teneriffe — Horace to the contrary notwithstanding, — or sought and found the north pole. The evidence is against such vain imaginings. The world of Homer is a narrow world; to him the earth and the Ægean Sea are alike boundless, and in his thought fairy-land could begin west of the Lotos-eaters, and one could there forget the things of this life. There is little doubt that the author of the Odyssey considered Greece an island, and Asia and Africa another, and thought the great ocean eddied around the north of Hellas to a union with the Euxine.

[3] Quinque tenent caelum zonae: quarum una corusco
Semper sole rubens, et torrida semper ab igni;
Quam circum extremae dextra laevaque trahuntur
Caeruleae glacie concretae atque imbribus atris;
Has inter mediam duae mortalibus aegris
Munere concessae divom.
(Virgil, *Georg.* i. 233.)

The passage appears to be paraphrased from similar lines which are preserved in Achilles Tatius (*Isag. in Phænom. Arat.*; Petavius, *Uranolog.*

Upon the question of the distribution of land and water, unanimity no longer prevailed. By some it was maintained that there was one ocean, confluent over the whole globe, so that the body of known lands, that so-called continent, was in truth an island, and whatever other inhabitable regions might exist were in like manner surrounded and so separated by vast expanses of untraversed waves. Such was the view, scarcely more than a survival of the ocean-river of the poets deprived of its further bank by the assumption of the sphericity of the earth, held by Aristotle,[1] Crates of Mallus, Strabo, Pliny, and many others. If this be called the oceanic theory, we may speak of its opposite as the continental: according to this view, the existing land so far exceeded the water in extent that it formed in truth the continent, holding the seas quite separate within its hollows. The origin of the theory is obscure, even though we recall that Homer's ocean was itself contained. It was strikingly presented by Plato in the *Phaedo*, and is implied in the Atlantis myth; it may be recalled, too, that Herodotus, often depicted as a monster of credulity, had broken the bondage of the ocean-river, because he could not satisfy himself of the existence of the ocean in the east or north; and while reluctantly admitting that Africa was surrounded by water, considered Gaul to extend indefinitely westward.[2] Hipparchus revived the doctrine, teaching that Africa divided the Indian Ocean from the Atlantic in the south, so that these seas lay in separate basins. The existence of an equatorial branch of the ocean, a favorite dogma of the other school, was also denied by Polybius, Posidonius, and Geminus.[3]

The reports of traders and explorers led Marinus to a like conclusion; both he and Ptolemy, misinterpreting their information, believed that the eastern coast of Asia ran south instead of north, and they united it with the eastern trend of Africa, supposing at the same time that the two continents met also in the west.[4] The continental theory, despite its famous disciples, made no headway at Rome, and was consequently hardly known to the Middle Ages before its falsity was proved by the circumnavigation of Africa.[5]

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p. 153), and by him attributed to the *Hermes* of Eratosthenes. See also Tibullus, *Eleg.* iv., Ovid, and among the men of science, Aristotle, *Meteorol.*, ii. 5, §§ 11, 13, 15; Strabo, *Geogr.*, i. 2, § 24; ii. 5, § 3; Pliny, *Hist. Nat.*, ii. ch. 68; Mela, *De chorographia*, i. 1; Cicero, *Republ.*, vi. 16; *Tusc. Disp.*, i. 28.

[1] Aristotle, *Meteorol.*, ii. 1, § 10; ii. 5, § 15; *De caelo*, ii. 14 *ad fin.* Letronne, finding the latter passage inconvenient, reversed the meaning by the arbitrary insertion of a negative (*Discussion de l'opinion d'Hipparque sur le prolongement de l'Afrique au sud de l'Equator* in *Journal des Savans*, 1831, pp. 476, 545). The theory which he built upon this reconstructed foundation so impressed Humboldt that he changed his opinion as to the views of Aristotle on this point (*Examen critique*, ii. 373). Such an emendation is only justifiable by the sternest necessity, and it has been shown by Ruge (*Der Chaldäer Seleukos*, Dresden, 1865), and Prantl (*Werke des Aristoteles uebersetzt und erläutert*, Bd. ii.; *Die Himmelsgebäude*, note 61), that neither sense nor consistency requires the change.

[2] Herodotus, ii. 23; iii. 115; iv. 36, 40, 45.

[3] Geminus, *Isagoge.* Polybius's work on this question is lost, and his own expressions as we have them in his history are more conservative. It is, he says, unknown, whether Africa is a continent extending toward the south, or is surrounded by the sea. Po., *Hist.* iii. 38; Hampton's translation (London, 17,), i. 334.

[4] Ptolemy, *Geogr.*, vii. 3, 5.

[5] The circumnavigation of Africa by Phœni-

That portion of Europe, Asia, and Africa known to the ancients, whether regarded as an island, or as separated from the rest of the world by climatic conditions merely, or by ignorance, formed a distinct concept and was known by a particular name, ἡ οἰκουμένη. Originally supposed to be circular, it was later thought to be oblong and as having a length more than double its width. Those who believed in its insularity likened its shape to a sling, or to an outspread chlamys or military cloak, and assumed that it lay wholly within the northern hemisphere. In absolute figures, the length of the known world was placed by Eratosthenes at 77,800 stadia, and by Strabo at 70,000. The latter figure remained the common estimate until Marinus of Tyre, in the second century A. D., receiving direct information from the silk-traders of a caravan route to China, substituted the portentous exaggeration of 90,000 stadia on the parallel of Rhodes, or 225°. Ptolemy, who followed Marinus in many things, shrank from the naïveté whereby the Tyrian had interpreted a seven months' caravan journey to represent seven months' travelling in a direct line at the rate of twenty miles a day, and cut down his figures to 180°, or 72,000 stadia.[1] It appears, therefore, that Strabo considered the known world as occupying not much over one third of the circuit of the temperate zone, while Marinus, who adopted 180,000 stadia as the measure of the earth, claimed a knowledge of two thirds of that zone, and supposed that land extended indefinitely eastward beyond the limit of knowledge.

What did the ancients picture to themselves of this unknown portion of the globe? The more imaginative found there a home for ancient myth and modern fable; the geographers, severely practical, excluded it from the scope of their survey; philosophers and physicists could easily supply from theory what they did not know as fact. Pythagoras, it is said, had taught that the whole surface of the earth was inhabited. Aristotle demonstrated that the southern hemisphere must have its temperate zone, where winds similar to our own prevailed; his successors elaborated the hint into a systematized nomenclature, whereby the inhabitants of the earth were divided into four classes, according to their location upon the surface of the earth with relation to one another.[2]

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cians at the command of Necho, though described and accepted by Herodotus, can hardly be called an established fact, in spite of all that has been written in its favor. The story, whether true or false, had, like others of its kind, little influence upon the belief in the impassable tropic zone, because most of those who accepted it supposed that the continent terminated north of the equator.

[1] Ptolemy, *Geogr.*, i. 11–14. Eratosthenes and Strabo located their first meridian at Cape St. Vincent; Marinus and Ptolemy placed it in the Canary group. See Vol. II. p. 95.

[2] Geminus, *Isagoge*, ch. 13; Achilles Tatius, *Isagoge in Phænom. Arati;* Cleomedes, *De circulis sublimis*, i. 2. The first two are given in the *Uranologion* of Petavius, Lond., Paris, 1630, pp. 56, 155.

The classes were always divided on the same principle, and each contained two groups so related that they could apply to one another reciprocally the name by which the whole class was designed. These names, however, are not always applied to the same classes by different writers. 1. The first class embraced the people who lived in the same half of the same temperate zone; to them all it was day or night, summer or winter, at the same time. They were called **σύνοικοι** by Cleomedes, but **περίοικοι** by Achilles Tatius. 2. The second class included such peoples as lived in the same temperate zone, but were

This system was furthest developed by the oceanic school. The rival of Eratosthenes, Crates of Mallus (who achieved fame by the construction of a large globe), assumed the existence of a southern continent, separated from the known world by the equatorial ocean; it is possible that he introduced the idea of providing a distinct residence for each class of earth-dwellers, by postulating four island continents, one in each quarter of the globe. Eratosthenes probably thought that there were inhabitable regions in the southern hemisphere, and Strabo added that there might be two, or even more, habitable earths in the northern temperate zone, especially near the parallel of Rhodes.[1] Crates introduced his views at Rome, and the oceanic theory remained a favorite with the Roman physicists. It was avowed by Pliny, who championed the existence of antipodes against the vulgar disbelief. In the fine episode in the last book of Cicero's *Republic*, the younger Scipio relates a dream, wherein the elder hero of his name, Scipio Africanus, conveying him to the lofty heights of the Milky Way, emphasized the futility of fame by showing him upon the earth the regions to which his name could never penetrate: "Thou seest in what few places the earth is inhabited, and those how scant; great deserts lie between them, and they who dwell upon the earth are not only so scattered that naught can spread from one community to another, but so that some live off in an oblique direction from you, some off toward the side, and some even dwell directly opposite to you."[2] Mela confines himself to a mention of the *Antichthones*, who live in the temperate zone in the south, and are cut off from us by the intervening torrid zone.[3]

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divided by half the circumference of that zone; so that while they all had summer or winter at the same time, the one group had day when the other had night, and *vice versa*. These groups could call one another περίοικοι according to Cleomedes, but ἀντίχθονες according to Tatius. 3. The third class included those who were divided by the torrid zone, so that part lived in the northern temperate zone and part in the southern, but yet so that all were in the same half of their respective zones; *i. e.*, all were in either the eastern or western, upper or lower, hemisphere. Day and night were shared by the whole class at once, but not the seasons, the northern group having summer when the southern had winter, and *vice versa*. These groups could call one another ἄντοικοι. 4. The fourth class comprised the groups which we know as antipodes, dwelling with regard to one another in different halves of the two temperate zones, so that they had neither seasons nor day or night in common, but stood upon the globe diametrically opposed to one another. All writers agree in calling these groups ἀντίποδες. The introduction of the word *antichthones* in place of *perioeci* was due, apparently, to a misunderstanding of the Pythagorean *antichthon*. This name was properly applied to the imaginary planet invented by the early Pythagoreans to bring the number of the spheres up to ten; it was located between the earth and the central fire, and had the same period of revolution as the earth, from the outer, Grecian, side of which it was never visible. This "opposite earth," *Gegenerde*, was later confused with the other, western, or lower hemisphere of the earth itself. It was also sometimes applied to the inhabitants of the southern hemisphere, as by Cicero in the *Tusculan Disputations* (i. 28), "duabus oris distantibus habitabilem et cultum; quarum altera quam nos incolimus,

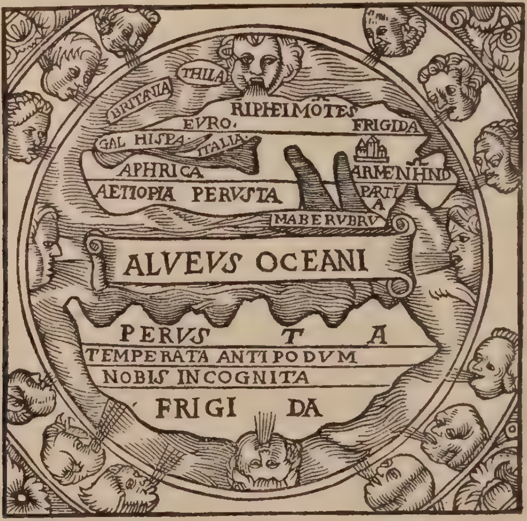
> Sub axe posita ad stellas septem unde horrifer
> Aquiloni stridor gelidas molitur nives,

altera australis, ignota nobis, *quam vocant Græci* ἀντίχθονα." Mela has the same usage (i. 4, 5), as quoted below. Macrobius, *Comm. in Somn. Scip.* lib. ii. 5, uses the nomenclature of Cleomedes. Reinhardt, quoted in Engelmann's *Bibliotheca classica Græca*, under Geminus, I have not been able to see.

[1] Strabo, i. 4, § 6, 7; i. 2, § 24. Geminus, *Isagoge*, 13. Muellenhof, *Deutsche Alterthumskunde*, i. 247–254. Berger, *Geogr. Fragmente d. Eratosthenes*, 8, 84.

[2] Cicero, *Respubl.*, vi. 15 . . . sed partim obliquos, partim transversos, partim etiam adversos stare vobis. Some MSS. read aversos. See also *Tusc. Disp.*, i. 28; *Acad.*, ii. 39.

[3] Antichthones alteram [zonam], nos alteram



MACROBIUS.*

Indeed, the southern continent, the other world, as it was called,[1] made a more distinct impression than the possible other continents in the northern hemisphere. Hipparchus thought that Trapobene might be a part of this southern world, and the idea that the Nile had its source there was widespread: some supposing that it flowed beneath the equatorial ocean; others believing, with Ptolemy, that Africa was connected with the southern continent. The latter doctrine was shattered by the discovery of the Cape of Good Hope; but the continent was revived when Tierra del Fuego, Australia, and New Zealand were discovered, and attained gigantic size on the

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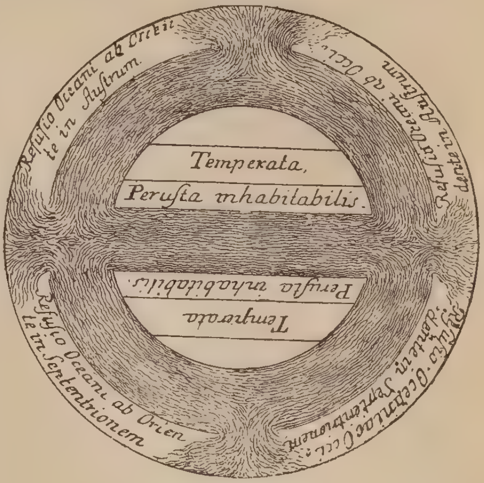
incolimus. Illius situs ob ardorem intercedentis plagae incognitus, huius dicendus est. Haec ergo ab ortu porrecta ad occasum, et quia sic iacet aliquanto quam ubi latissima est longior, ambitur omnis oceano. Mela, *Chor.*, i. 4, 5. Because Mela says that the known world is *but little* longer than its width, it has been supposed that he was better informed than his contemporaries, and attributed something like its real extent to Africa. Thomassy (*Les papes géographiques*, Paris, 1852, p. 17) finds in his work a rival system to that of Ptolemy. The discovery of America, he thinks, was due to Ptolemy; that of the Cape of Good Hope to Mela. It was the good fortune of Mela that his work was widely read in the Middle Ages, and had great influence; but we owe him no new system of geography, since he simply adopted the oceanic theory as represented by Strabo and Crates. That he slightly changed the traditional proportion between the length and breadth of the known world is of small importance. The known world, he states, was surrounded by the ocean, and there is nothing to show that he supposed Africa to extend below the equator. In his description of Africa he applies the terms length and breadth not as we should, but with contrary usage: "Africa ab orientis parte Nilo terminata, pelago a ceteris, brevior est quidem quam Europa, quia nec usquam Asiae et non totis huius litoribus obtenditur, longior tamen ipsa quam latior, et qua ad fluvium adtingit latissima," etc., i. 20. (Ed. Parthey, 1867.)

[1] Mela, i. 54, "Alter orbis." Cicero, *Tusc. Disp.*, i. 28, "Ora Australis."

* From *Macrobii Ambrosii Aurelii Theodosii in Somnium Scipionis, Lib. II.* (Lugduni, 1560).

maps of the sixteenth and seventeenth centuries; only within the last two centuries has it shrunk to the present limits of the antarctic ice.



MACROBIUS.*

The oceanic theory, and the doctrine of the Four Worlds, as it has been termed,[1] *terra quadrifiga*, was set forth in the greatest detail in a commentary on the Dream of Scipio, written by Macrobius, probably in the fifth century A. D. In the concussion and repulsion of the ocean streams he found a sufficient cause for the phenomena of the tides.[2]

Such were the theories of the men of science, purely speculative, originating in logic, not discovery, and they give no hint of actual knowledge regarding those distant regions with which they deal. From them we turn to examine the literature of the imagination, for geography, by right the handmaid of history, is easily perverted to the service of myth.

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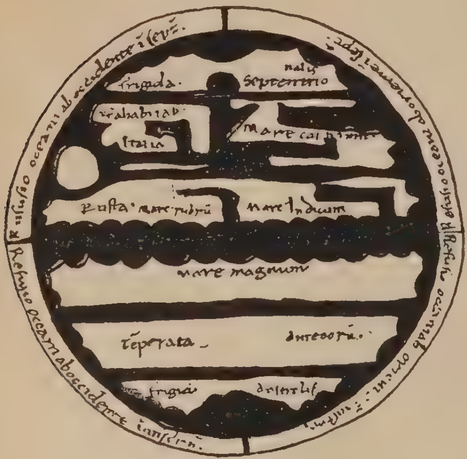
[1] Hyde Clarke, *Atlantis*, in the *Transactions of the Royal Historical Society*, London, New Series, vol. iii.; Reinaud, *Relations politiques*, etc., *de l'empire Romaine avec l'Asie orientale*, etc., in the *Journal Asiatique*, 1863, p. 140.

[2] The exposition of Macrobius is so interesting as illustrating the mathematical and physical geography of the ancients, and as showing how thoroughly the practical consequences of the sphericity of the earth were appreciated; it is so important in the present connection as demonstrating that the whole idea of inhabited lands in other parts of the earth was based on logic only, not on knowledge, that I have ventured to quote from it somewhat freely.

Macrobius, *Comm. in Somn. Scipionis*, ii. 5.—"Cernis autem eamdem terram quasi quibusdam redimitam et circumdatam cingulis, e quibus duos maxime inter se diversos, et caeli verticibus ipsis ex utraque parte subnixos, obriguisse pruina vides; medium autem illum, et maximum, solis ardore torreri. Duo sunt habitabiles: quorum australis ille, in quo qui insistunt, adversa vobis urgent vestigia, nihil ad vestrum genus; hic autem alter subjectus aquiloni, quem incolitis, cerne quam tenui vos parte contingat. Omnis enim terra, quae colitur a vobis, angusta verticibus, lateribus latior, parva quaedam insula est. . . ." (Cicero.) . . . Nam et septentrionalis et australis extremitas perpetua obriguerunt pruina. . . . Horum uterque habitationis impatiens est. . . . Medius cingulus et ideo maximus, aeterno afflatu continui caloris ustus, spatium quod et lato ambitu et prolixius occupavit, nimietate fervoris facit inhabitabile victuris. Inter extremos vero et medium duo majores ultimis, medio minores ex utriusque vicinitatis intemperie temperantur. . . . Licet igitur sint hae duae . . . quas diximus temperatas, non tamen ambae zonae hominibus nostri generis indultae sunt: sed sola superior, ... incolitur ab omni, quale scire possumus, hominum genere, Romani Graecive sint, vel barbari cujusque nationis. Illa vero . . . sola ratione intelligitur, quod propter similem temperiem similiter incolatur, sed a quibus, neque licuit unquam nobis nec licebit cognoscere: interjecta enim torrida utrique hominum generi commercium ad se denegat commeandi . . . Nec dubium est, nostrum quoque septentrionem [ventum] ad illos qui australi adjacent, propter eamdem rationem calidum pervenire, et austrum corporibus eorum gemino aurae suae rigore blandiri. Eadem ratio nos non permittit ambigere quin per illam quoque superficiem terrae quae ad nos habetur inferior, integer zonarum ambitus quae hic temperatae sunt, eodem ductu temperatus habeatur; atque ideo illic quoque eaedem duae zonae a se distantes similiter incolantur. . . . Nam si nobis vivendi facultas est in hac terrarum parte quam colimus, quia, calcantes humum, caelum suspicimus super verticem, quia sol nobis et oritur et occidit, quia circumfuso fruimur aere cujus spiramus haustu, cur non et illic aliquos vivere credamus ubi eadem semper in

* From *Avr. Theodosii Macrobii Opera* (Lipsiæ, 1774).



MACROBIUS.*

The expanding horizon of the Greeks was always hedged with fable: in the north was the realm of the happy Hyperboreans, beyond the blasts of Boreas; in the east, the wonderland of India; in the south, Panchæa and the blameless Ethiopians; nor did the west lack lingering places for romance. Here was the floating isle of Æolus, brazen-walled; here the mysterious Ogygia, navel of the sea;[1] and on the earth's extremest verge were the Elysian Fields, the home of heroes exempt from

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promptu sunt? Nam, qui ibi dicuntur morari, eamdem credendi sunt spirare auram, quia eadem est in ejusdem zonalis ambitus continuatione temperies. Idem sol illis et obire dicitur nostro ortu, et orietur quum nobis occidet: calcabunt aeque ut nos humum, et supra verticem semper caelum videbunt. Nec metus erit ne de terra in caelum decidant, quum nihil unquam possit ruere sursum. Si enim nobis, quod asserere genus joci est, deorsum habitur ubi est terra, et sursum ubi est caelum, illis quoque sursum erit quod de inferiore suspicient, nec aliquando in superna casuri sunt.

Hi quos separat a nobis perusta, quos Graeci ἀντοικοὺς vocant, similiter ab illis qui inferiorem zonae suae incolunt partem interjecta australi gelida separantur. Rursus illos ab ἀντοικοῖς suis, id est per nostri cinguli inferiora viventibus, interjectio ardentis sequestrat: et illi a nobis septentrionalis extremitatis rigore removentur. Et quia non est una omnium affinis continuatio, sed interjectae sunt solitudines ex calore vel frigore mutuum negantibus commeatum, has terrae partes quae a quattuor hominum generibus incoluntur, maculas habitationum vocavit. . . .

9. Is enim quem solum oceanum plures opinantur, de finibus ab illo originali refusis, secundum ex necessitate ambitum fecit. Ceterum prior ejus corona per zonam terrae calidam meat, superiora terrarum et inferiora cingens, flexum circi equinoctialis imitata. Ab oriente vero duos sinus refundit, unum ad extremitatem septentrionis, ad australis alterum: rursusque ab occidente duo pariter enascuntur sinus, qui usque ad ambas, quas supra diximus, extremitates refusi occurrunt ab oriente demissis; et, dum vi summa et impetu immaniore miscentur, invicemque se feriunt, ex ipsa aquarum collisione nascitur illa famosa oceani accessio pariter et recessio. . . . Ceterum verior, ut ita dicam, ejus alveus tenet zonam perustam; et tam ipse qui equinoctialem, quam sinus ex eo nati qui horizontem circulum ambitu suae flexionis imitantur, omnem terram quadrifidam dividunt, et singulas, ut supra diximus, habitationes insulas faciunt . . . binas in superiore atque inferiore terrae superficie insulas. . . .

[1] Mr. Gladstone (*Homer and the Homeric age*, vol. iii.) transposes these Homeric localities to the east, and a few German writers agree with him. President Warren (*True key to ancient cosmologies*, etc., Boston, 1882) will have it that Ogygia is neither more nor less than the north pole. Neither of these views is likely to displace the one now orthodox. Mr. Gladstone is so much troubled by Odysseus's course on leaving Ogygia that he cannot hide a suspicion of corruption in the text. President Warren should remember that Ogygia apparently enjoyed the common succession of day and night. In Homeric thought the western sea extended northward and eastward until it joined the Euxine.

* After Santarem's *Atlas*, as a "mappemonde tirée d'un manuscrit de Macrobe du Xème siècle."

leath, "where life is easiest to man. No snow is there, nor yet great storm ior any rain, but always ocean sendeth forth the breeze of the shrill west to low cool on men."[1] Across the ocean river, where was the setting of the un, all was changed. There was the home of the Cimmerians, who dwelt n darkness; there the grove of Persephone and the dreary house of the lead.[2]

In the Hesiodic poems the Elysian Fields are transformed into islands, he home of the fourth race, the heroes, after death:—

> "Them on earth's utmost verge the god assign'd
> A life, a seat, distinct from human kind:
> Beside the deepening whirlpools of the main,
> In those blest isles where Saturn holds his reign,
> Apart from heaven's immortals calm they share
> A rest unsullied by the clouds of care:
> And yearly thrice with sweet luxuriance crown'd
> Springs the ripe harvest from the teeming ground."[3]

"Those who have had the courage to remain stedfast thrice in each life, nd to keep their souls altogether from wrong," sang Pindar, "pursue the oad of Zeus to the castle of Cronos, where o'er the isles of the blest cean breezes blow, and flowers gleam with gold, some from the land on listering trees, while others the water feeds; and with bracelets of these hey entwine their hands and make crowns for their heads."[4]

The Islands of the Blest, μακάρων νῆσοι, do not vanish henceforward from he world's literature, but continue to haunt the Atlantic through the Ro- nan period and deep into the Middle Ages. In the west, too, were localized ther and wilder myths; here were the scenes of the Perseus fable, the sland of the weird and communistic sisters, the Graeae, and the Gorgon- des, the homes of Medusa and her sister Gorgons, the birthplace of the read Chimaera.[5] The importance of the far west in the myths connected

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gygia, located northwest of Greece, would be ie centre, *omphalos*, of the sea, as Delphi was iter called the centre of the land-masses of the orld.

[1] *Odyssey*, iv. 561, etc.

[2] It is well known that whereas Odysseus ieets the spirits of the dead across Oceanus, pon the surface of the earth, there is in the *iad* mention of a subterranean Hades. The ssyrio-Babylonians had also the idea of an arth-encircling ocean stream,—the word 'Ωκεα- ος the Greeks said was of foreign origin,—and n the south of it they placed the sea of the ead, which held the island homes of the de- arted. As in the *Odyssey*, it was a place given ver to dust and darkness, and the doors of it ere strongly barred; no living being save a od or a chosen hero might come there. Schra- er, *Namen d. Meere in d. Assyrischen Inschrif- n* (*Abhandl. d. k. Akad. d. Wiss. zu Berlin*, 377, p. 169). Jeremias, *Die Babylonisch-Assyri- hen Vorstellungen vom Leben nach dem Tode* (Leipzig, 1887). The Israelites, on the other hand, imagined the home of the dead as underground. *Numbers*, xvi. 30, 32, 33.

Buchholtz, *Die Homerische Realien*, i. 55, places Hades on the European shores of Ocean, but the text of the Odyssey seems plainly in favor of the site across the stream, as Völcker and others have understood.

[3] Hesiod, *Works and Days*, 166–173; Elton's translation, London, 1815, p. 22. Paley marks the line Τηλοῦ ἀπ' ἀθανάτων τοῖσιν Κρόνος ἐμβασιλεύει as probably spurious. Cronos appears to have been originally a Phœnician deity, and his westward wandering played an important part in their mythology. We shall find further traces of this divinity in the west.

[4] Pindar, *Olymp.*, ii. 66–85, Paley's translation, London, 1868, p. 12. See also Euripides, *Helena*, 1677.

[5] Æschylus, in the *Prometheus bound*, introduced the Gorgon islands in his epitome of the wanderings of Io, and certainly seems to speak

with Hercules is well known. In the traditionary twelve labors the Greek hero is confused with his prototype the Tyrian Melkarth, and those labors which deal with the west were doubtless borrowed from the cult which the Greeks had found established at Gades when trade first led them thither. In the tenth labor it is the western isle Erytheia, which Hercules visits in the golden cup wherein Helios was wont to make his nocturna ocean voyage, and from which he returns with the oxen of the giant Geryon. Even more famous was the search for the apples of the Hesperides, which constituted the eleventh labor. This golden fruit, the wedding gift produced by Gaa for Hera, the prudent goddess, doubtful of the security of Olympus, gave in charge to the Hesperian maids, whose island garden lay at earth's furthest bounds, near where the mysterious Atlas, their father or their uncle, wise in the secrets of the sea, watched over the pillars which propped the sky, or himself bore the burden of the heavenly vault. The poets delighted to depict these isles with their shrill-singing nymphs, in the same glowing words which they applied to the Isles of the Blessed. "Oh that I, like a bird, might fly from care over the Adriatic waves!" cries the chorus in the Crowned Hippolytus,

"Or to the famed Hesperian plains,
Whose rich trees bloom with gold,
To join the grief-attuned strains
My winged progress hold:
Beyond whose shores no passage gave
The ruler of the purple wave;

"But Atlas stands, his stately height
The awfull boundary of the skies:
There fountains of Ambrosia rise,
Wat'ring the seat of Jove: her stores
Luxuriant there the rich soil pours
All, which the sense of gods delights."[1]

When these names first became attached to some of the Atlantic islands is uncertain. Diodorus Siculus does not apply either term to the island discovered by the Carthaginians, and described by him in phrases applicable to both. The two islands described by sailors to Sertorius about 80 B.C. were depicted in colors which reminded Plutarch of the Isles of the Blessed, and it is certain that toward the close of the republic the name *Insulae Fortunatae* was given to certain of the Atlantic islands, including the Canaries. In the time of Juba, king of Numidia, we seem to distinguish at least three groups, the *Insulae Fortunatae*, the *Purpurariae*, and the *Hesperides*, but beyond the fact that the first name still designated some of the Canaries identification is uncertain; some have thought that different groups among the Canaries were known by separate names, while others

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of them as in the east; the passage is, however, imperfect, and its interpretation has overtasked the ablest commentators.

[1] Euripides, *Hippolytus*, 742–751; Potter's translation, i. p. 356. See also Hesiod, *Theog.*, 215, 517–519.

hold that one or both of the Madeira and Cape de Verde groups were known.[1] The Canaries were soon lost out of knowledge again, but the Happy or Fortunate Islands continued to be an enticing mirage throughout the Middle Ages, and play a part in many legends, as in that of St. Brandan, and in many poems.[2]

Beside these ancient, widespread, popular myths, embodying the universal longing for a happier life, we find a group of stories of more recent date, of known authorship and well-marked literary origin, which treat of western islands and a western continent. The group comprises, it is hardly necessary to say, the tale of Atlantis, related by Plato; the fable of the land of the Meropes, by Theopompus; and the description of the Saturnian continent attributed to Plutarch.

The story of Atlantis, by its own interest and the skill of its author, has made by far the deepest impression. Plato, having given in the *Republic* a picture of the ideal political organization, the state, sketched in the *Timaeus* the history of creation, and the origin and development of mankind; in the *Critias* he apparently intended to exhibit the action of two types of political bodies involved in a life-and-death contest. The latter dialogue was unfinished, but its purport had been sketched in the opening of the *Timaeus*. Critias there relates "a strange tale, but certainly true, as Solon declared," which had come down in his family from his ancestor Dropidas, a near relative of Solon. When Solon was in Egypt he fell into talk with an aged priest of Saïs, who said to him: "Solon, Solon, you Greeks are all children, — there is not an old man in Greece. You have no old traditions, and know of but one deluge, whereas there have been many destructions of mankind, both by flood and fire; Egypt alone has escaped them, and in Egypt alone is ancient history recorded; you are ignorant of your own past." For long before Deucalion, nine thousand years ago, there was an Athens founded, like Saïs, by Athena; a city rich in power and wisdom, famed for mighty deeds, the greatest of which was this. At that time there lay opposite the columns of Hercules, in the Atlantic, which was then navigable, an island larger than Libya and Asia together, from which sailors could pass to other islands, and so to the continent. The sea in front of the straits is indeed but a small harbor; that which lay beyond the island, however, is worthy of the name, and the land which surrounds that greater sea may be truly called the continent. In this island of Atlantis had grown up a mighty power, whose kings were descended from Poseidon, and had extended their sway over many islands and over a portion of the great continent; even Libya up to the gates of Egypt, and Europe as far as Tyrrhenia, submitted to their sway. Ever harder they pressed upon the other nations of the known world, seeking the subjugation of the whole. "Then, O Solon, did the strength of your republic become clear to all men, by reason of her courage and force. Foremost in the arts of war, she met the invader at the head of Greece; abandoned by her allies, she triumphed alone over the western foe, delivering from the yoke all the nations within the columns. But afterwards came a day and night of great floods and earthquakes; the earth engulfed all the Athenians who were capable of bearing arms, and Atlantis disappeared, swallowed by the waves: hence it is that this sea is no longer navigable, from the vast mud-shoals formed by the vanished island." This tale so impressed Solon that he meditated an epic on the subject, but on his return, stress of public business prevented his design. In the *Critias* the empire and chief city of Atlantis is described with wealth of detail, and the descent of the royal family from Atlas, son of Poseidon, and a nymph of the island, is set forth. In the midst of a council upon Olympus, where Zeus, in true epic style, was revealing to the gods his designs concerning the approaching war, the dialogue breaks off.

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[1] Mela, iii. 100, 102, etc. The chief passage is Pliny, *Hist. Nat.*, vi. 36, 37, who took his information from King Juba and a writer named Statius Sebosus. Pliny, who, beside the groups named in the text, mentions the Gorgades, which he identifies with the place where Hanno met the gorillas, has probably misunderstood and garbled his authorities; his account is contradictory and illusive.

[2] Tzetzes (*Scholia in Lycophron*, 1204, ed. Mueller, ii. 954), a grammarian of the twelfth century, says that the Isles of the Blessed were located in the ocean by Homer, Hesiod, Euripides, Plutarch, Dion, Procopius, Philostratus and others, but that to many it seems that Britain must be the true Isle of the Blessed; and in support of this view he relates a most curious tale of the ferriage of the dead to Britain by Breton fishermen.

Such is the tale of Atlantis. Read in Plato, the nature and meaning of the narrative seem clear, but the commentators, ancient and modern, have made wild work. The voyage of Odysseus has grown marvellously in extent since he abandoned the sea; Io has found the pens of the learned more potent goads than Hera's gadfly; but the travels of Atlantis have been even more extraordinary. No region has been so remote, no land so opposed by location, extent, or history to the words of Plato, but that some acute investigator has found in it the origin of the lost island. It has been identified with Africa, with Spitzbergen, with Palestine. The learned Latreille convinced himself that Persia best fulfilled the conditions of the problem; the more than learned Rudbeck ardently supported the claims of Sweden through three folios. In such a search America could not be overlooked. Gomara, Guillaume de Postel, Wytfliet, are among those who have believed that this continent was Atlantis; Sanson in 1669, and Vaugondy in 1762, ventured to issue a map, upon which the division of that island among the sons of Neptune was applied to America, and the outskirts of the lost continent were extended even to New Zealand. Such work, of course, needs no serious consideration. Plato is our authority, and Plato declares that Atlantis lay not far west from Spain, and that it disappeared some 8,000 years before his day. An inquiry into the truth or meaning of the record as it stands is quite justifiable, and has been several times undertaken, with divergent results. Some, notably Paul Gaffarel[1] and Ignatius Donnelly,[2] are convinced that Plato merely adapted to his purposes a story

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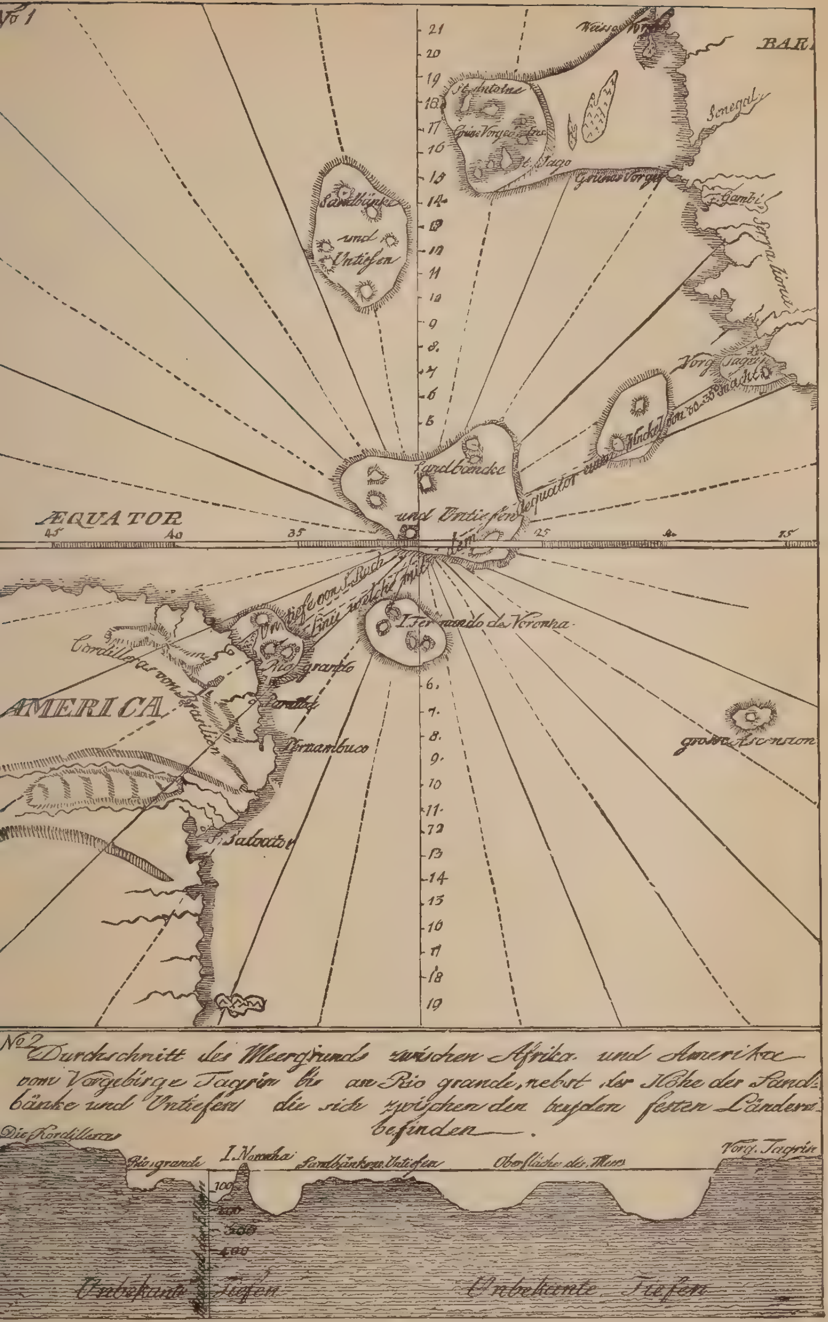
[1] *L'Atlantide*, by Paul Gaffarel, in the *Revue de Géographie*, April, May, June, July, 1880 (vi. 241, 331, 421; vii. 21). See also, in his *Étude sur les rapports de l'Amérique et de l'ancien continent avant Christophe Colomb* (Paris, 1869).

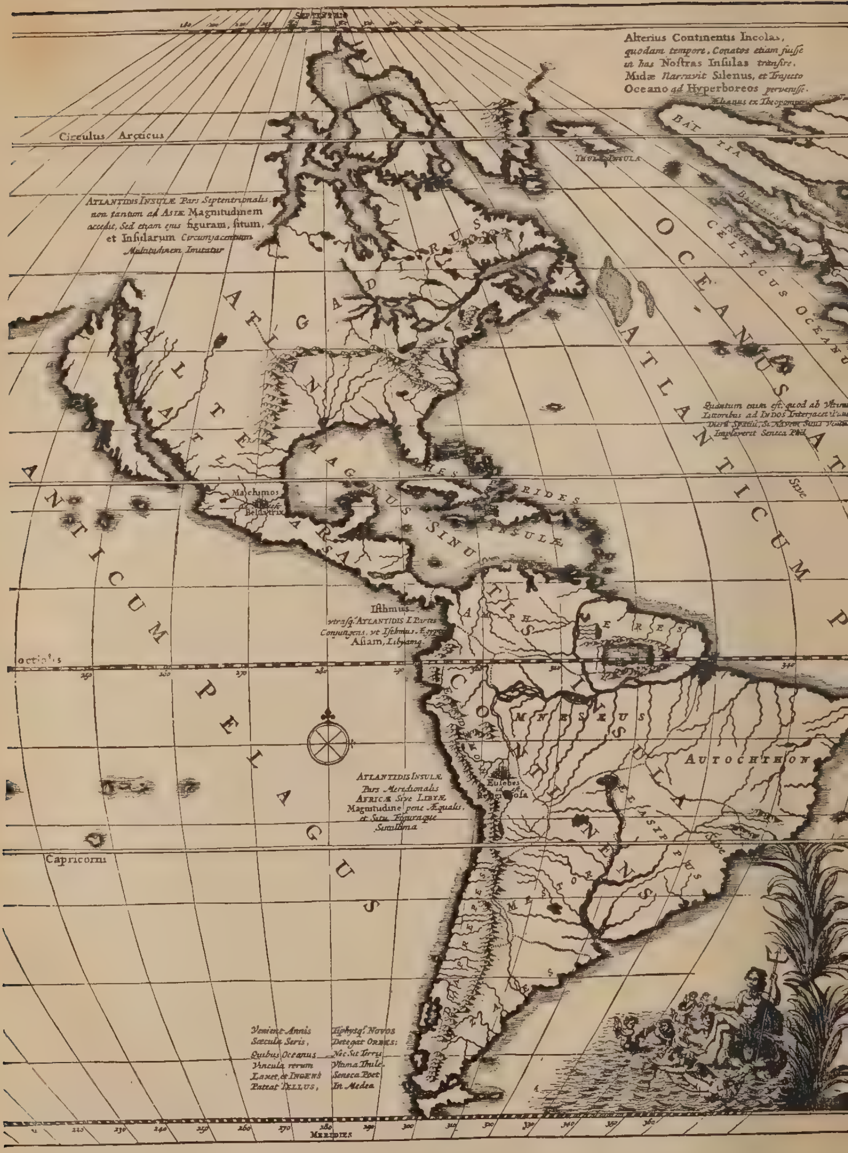
[2] *Atlantis: the antediluvian world*, New York, 1882.



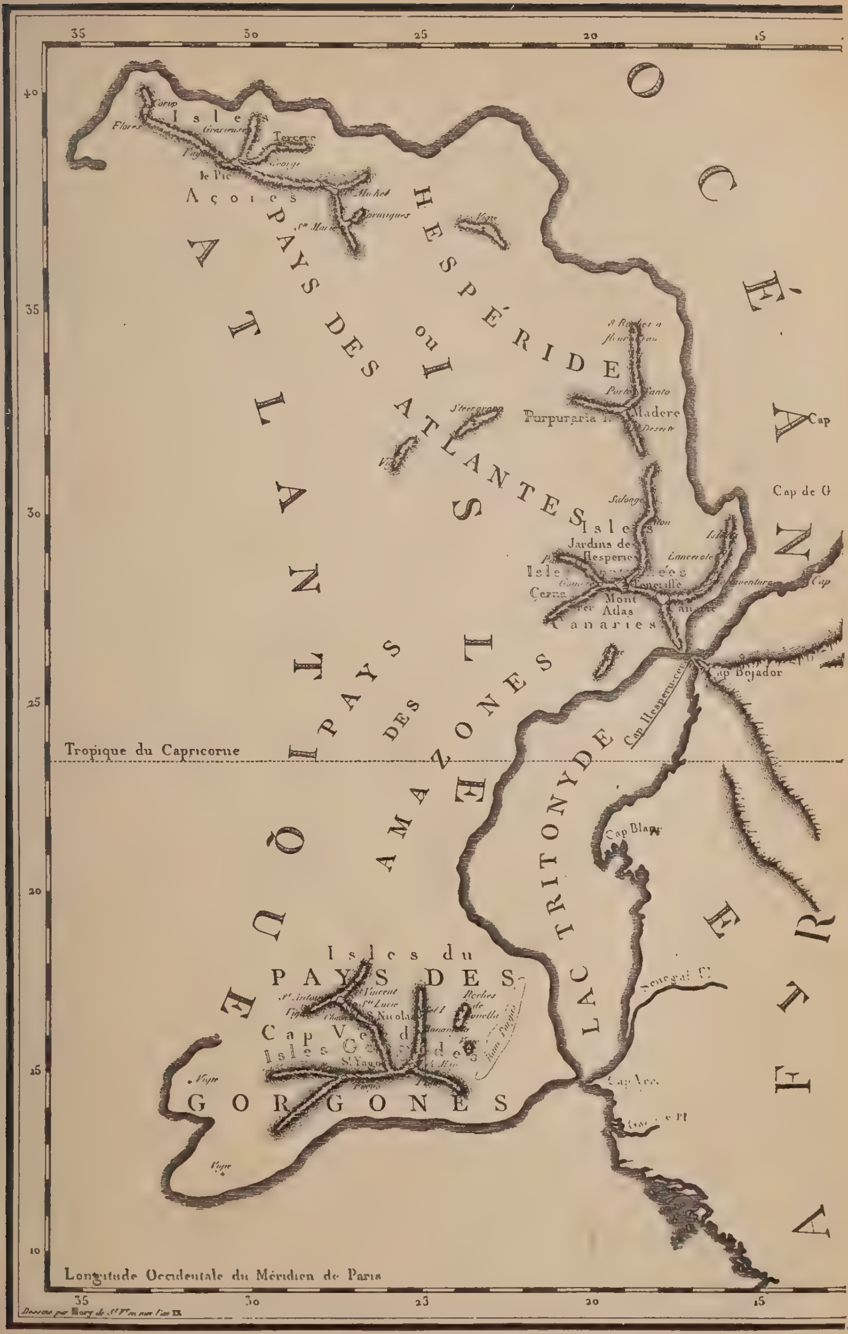
TRACES OF ATLANTIS.

Section of a map given in *Briefe über Amerika aus dem Italienischen des Hn. Grafen Carlo Carli übersetzt, Dritter Theil* (Gera, 1785), where it is called an "Auszug aus denen Karten welche der Pariser Akademie der Wissenschaften (1737, 1752) von dem Herrn von Buache übergeben worden sind."

ATLANTIS INSULA

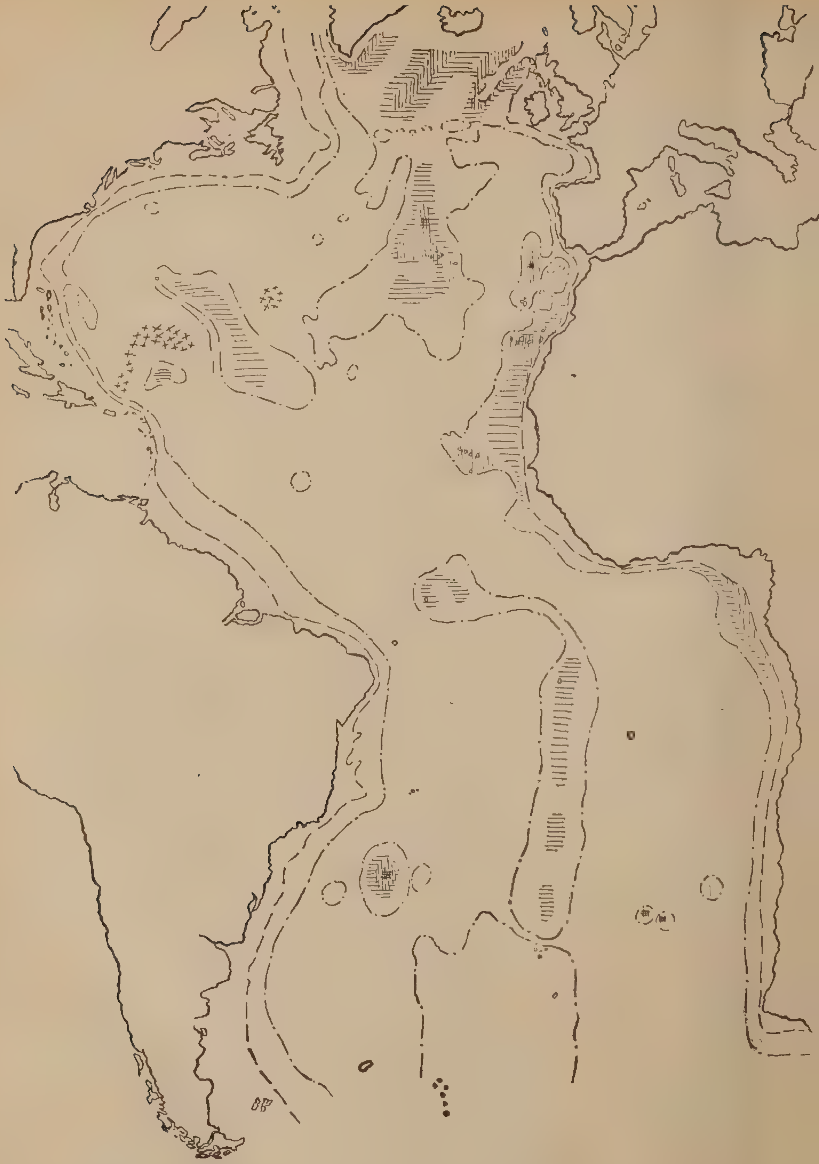

Septentrio
Alterius Continentis Incolas, quodam tempore, Conatos etiam fuisse in has Nostras Insulas transire. Midæ Narravit Silenus, et Trajecto Oceano ad Hyperboreos pervenisse. Ælianus ex Theopompo
Circulus Arcticus
ATLANTIDIS INSULÆ Pars Septentrionalis non tantum ad ASIÆ Magnitudinem accedit, Sed etiam eius figuram, situm, et Insularum Circumjacentium Multitudinem Imitatur
THULE INSULA
BATTIA
OCEANUS ATLANTICUS
CELTICUS OCEANUS
ATLANTICUM
ATLANTICUM PELAGUS
MAGNUS SINUS
HESPERIDES INSULÆ
Machimos
Bellatrix
Isthmus utrasq. ATLANTIDIS I. Partes Conjungens, ut Isthmus Egypti Asiam, Libyam.
Quantum enim est, quod ab ultimis Littoribus ad INDOS Interjacet? Paucorum Dierū Spatiū, Si Navem Suus Ventus Impleverit. Seneca Phil.
AUTOCHTHON
ATLANTIDIS INSULÆ Pars Meridionalis AFRICÆ Sive LIBYÆ Magnitudine pene Æqualis, et Situ Figuraque Simillima
Eulebes
Capricorni
Venient Annis Sæcula Seris, Quibus Oceanus Vincula rerum Laxet, et INGENS Pateat TELLUS,
Tiphysq. Novos Detegat ORBES: Nec Sit Terris Ultima Thule. Seneca Poet. In Medea
Meridies
250
260
270
280
290
300
310
320
330
340
350
360

The annexed cut is an extract from Sanson's map of America, showing views respecting the new world as constituting the Island of Atlantis. It is called: *Atlantis insula à Nicolao Sanson, antiquitati restituta; nunc demum majori forma delineata, et in decem regna juxta decem Neptuni filios distributa. Præterea insulæ, nostræq. continentis regiones quibus imperavere Atlantici reges; aut quas armis tentavere, ex conatibus geographicis Gulielmi Sanson, Nicolai filii* (Amstelodami apud Petrum Mortier). Uricoechea in the *Mapoteca Colombiana* puts this map under 1600, and speaks of a second edition in 1688, which must be an error. Nicholas Sanson was born in 1600, his son William died in 1703. Beside the undated Amsterdam print quoted above, Harvard College Library possesses a copy in which the words *Novus orbis potius Altera continent sive* are prefixed to the title, while the date MDCLXVIIII is inserted after *filii*. This copy was published by Le S. Robert at Paris in 1741.



CARTE CONJECTURALE DE L'ATLANTIDE.

From a map in Bory de St. Vincent's *Essais sur les isles Fortunées*, Paris [1803]. A map in Anastasius Kircher's *Mundus Subterraneus* (Amsterdam, 1678), i. 82, shows Atlantis as a large island midway between the pillars of Hercules and America.



CONTOUR CHART OF THE BOTTOM OF THE ATLANTIC.

Sketched from the colored map of the United States Hydrographic office, as given in Alexander Agassiz's *Three Cruises of the Blake* (Cambridge, 1888), vol. i. The outline of the continents is shown by an unbroken line. The 500 fathom shore line is a broken one (—— —— —— ——). The 2,000 fathom shore line is made by a dash and dot (——. ——. ——. ——). The large areas in mid-ocean enclosed by this line, have this or lesser depths. Of the small areas marked by this line, the depth of 2,000 fathoms or less is within these areas in all cases except as respects the small areas on the latitude of Newfoundland, where the larger areas of 2,000 fathoms' depth border on the small areas of greater depth. Depths varying from 1,500 to 1,000 fathoms are shown by horizontal lines; from 1,000 to 500 by perpendicular lines; and the crossed lines show the shallowest spots in mid-ocean of 500 fathoms or less. The areas of greatest depth (over 3,500 fathoms) are marked with crosses.

which Solon had actually brought from Egypt, and which was in all essentials true. Corroboration of the existence of such an island in the Atlantic is found, according to these writers, in the physical conformation of the Atlantic basin, and in marked resemblances between the flora, fauna, civilization, and language of the old and new worlds, which demand for their explanation the prehistoric existence of just such a bridge as Atlantis would have supplied. The Atlantic islands are the loftiest peaks and plateaus of the submerged island. In the widely spread deluge myths Mr. Donnelly finds strong confirmation of the final cataclysm; he places in Atlantis that primitive culture which M. Bailly sought in the highlands of Asia, and President Warren refers to the north pole. Space fails for a proper examination of the matter, but these ingenious arguments remain somewhat top-ieavy when all is said. The argument from ethnological resemblances is of all arguments the weakest in the hands of advocates. It is of value only vhen wielded by men of judicial temperament, who can weigh difference igainst likeness, and allow for the narrow range of nature's moulds. The existence of the ocean plateaus revealed by the soundings of the "Dolphin" ind the "Challenger" proves nothing as to their having been once raised ibove the waves; the most of the Atlantic islands are sharply cut off from hem. Even granting the prehistoric migration of plants and animals beween America and Europe, as we grant it between America and Asia, it loes not follow that it took place across the mid-ocean, and it would still oe a long step from the botanic "bridge" and elevated "ridge" to the sland empire of Plato. In short, the conservative view advocated by Longinus, that the story was designed by Plato as a literary ornament and a hilosophic illustration, is no less probable to-day than when it was suggested in the schools of Alexandria. Atlantis is a literary myth, belonging vith *Utopia*, the *New Atlantis*, and the *Orbis alter et idem* of Bishop Hall.

Of the same type is a narrative which has come down indirectly, among he flotsam and jetsam of classic literature: it is a fragment from a lost vork by Theopompus of Chios, a historian of the fourth century B. C., found n the *Varia Historia* of Aelian, a compiler of the third century A. D.[1] The tory is told by the satyr Silenus to Midas, king of Phrygia, and is, as few ommentators have refrained from remarking, worthy the ears of its audior.[2] "Selenus tolde Midas of certaine Islands, named Europa, Asia, and ibia, which the Ocean Sea circumscribeth and compasseth round about. nd that without this worlde there is a continent or percell of dry lande, hich in greatnesse (as hee reported) was infinite and unmeasurable, that it ourished and maintained, by the benifite of the greene medowes and pasture plots, sundrye bigge and mighty beastes; that the men which inhabite the same climats, exceede the stature of us twise, and yet the length o there life is not equale to ours." Many other wonders he related of the two cities, Machimus, the warlike, and Euseues, the city of peace, and how the inhabitants of the former once made an attack upon Europe, and came first upon the Hyperboreans; but learning that they were esteemed the most holy of the dwellers in that island, they "had them in contempte, detesting and abhorring them as naughty people, of preposterous properties and damnable behauiour, and for that cause interrupted their progresse supposing it an enterprise of little worthinesse or rather none at al, to trauaile into such a countrey." The concluding passage relating to the strange country inhabited by the Meropes, from whose name later writers have called the continent Meropian, bears only indirectly upon the subject, as characterizing the whole narrative.[1]

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[1] Theopomp., *Fragmenta*, ed. Wieters, 1829, o. 76, p. 72. *Geographi Graec. minores*, ed. ueller, i. 289. Aeliani, *Var. Hist.*, iii. 18. The xtracts in the text are taken from "*A Registre Hystories, etc., written in Greeke by Aelianus, a Roman, and delivered in English by* A.[braham] F.[leming]." London, 1576, fol. 36.

[2] We owe this quip to Tertullian (he at least is the earliest writer to whom I can trace it): "Ut Silenus penes aures Midae blattit, *apta sane grandioribus fabulis* (*De pallio*, cap. 2).

Without admitting the harsh judgment of Aelian, who brands Theopompus as a "coyner of lyes and a forger of fond fables," it is clear that we are dealing here with literature, not with history, and that the identification o the land of the Meropes, or, as Strabo calls it, Meropis, with Atlantis o with America is arbitrary and valueless.[2]

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[1] "Furthermore he tolde one thing among all others, meriting admiration, that certain men called Meropes dwelt in many cittyes there about, and that in the borders adiacent to their countrey, was a perilous place named Anostus, that is to say, wythout retourne, being a gaping gulfe or bottomles pit, for the ground is as it were cleft and rent in sonder, in so much that it openeth like to the mouth of insatiable hell, yt it is neither perfectly lightsome, nor absolutely darksome, but that the ayer hangeth ouer it, being tempered with a certaine kinde of clowdy rednes, that a couple of floodes set their recourse that way, the one of pleasure the other of sorow, and that about each of them growe plantes answearable in quantity and bignes to a great plaine tree. The trees which spring by ye flood of sorow yeldeth fruite of one nature, qualitie, and operation. For if any man taste thereof, a streame of teares floweth from his eyes, as out of a conduite pipe, or sluse in a running riuer, yea, such effect followeth immediately after the eating of the same, that the whole race of their life is turned into a tragical lamentation, in so much that weeping and wayling knitteth their carkeses depriued of vitall mouing, in a winding sheete, and maketh them gobbettes for the greedy graue to swallow and deuoure. The other trees which prosper vpon the bankes of the floode of pleasure, beare fruite cleane contrary to the former, for whosoeuer tasteth thereof, he is presently weined from the pappes of his auncient appetites and inueterate desires, & if he were linked in loue to any in time past, he is fettered in the forgetfulnes of them, so that al remembrance is quite abolished, by litle and litle he recouereth the yeres of his youth, reasuming vnto him b degrees, the times & seasons, long-since, spen and gone. For, the frowardnes and crookedne of old age being first shaken of, the amiablene and louelynesse of youth beginneth to budde, i so much as they put on ye estate of stripplings then become boyes, then change to children then reenter into infancie, & at length deat maketh a finall end of all."

Compare the story told by Mela (iii. 10) abou the Fortunate Isles: "Una singulari duorun fontium ingenio maxime insignis: alterum qu gustavere risu solvuntur, ita adfectis remediun est ex altero bibere."

It should be noted that the country describe by Theopompus is called by him simply "Th Great Continent."

[2] Strabo, vii. 3, § 6. Perizonius makes this passage in Aelian the peg for a long note on ancien knowledge of America, in which he brings together the most important passages bearing o the subject. He remarks: "Nullus tamen dubito, quin Veteres aliquid crediderint vel sciverent, sed quasi per nebulam et caliginem, d America, partim ex antiqua traditione ab Aegyptiis vel Carthaginiensibus accepta, partim e ratiocinatione de forma et situ orbis terrarum unde colligebant, superesse in hoc orbe etian alias terras praeter Asiam, Africam, & Europam." In my opinion their assumed knowledge was based entirely on ratiocination, an was not real knowledge at all; but Perizonius well expresses the other view.

The same remark applies to the account of the great Saturnian continent that closes the curious and interesting dialogue "On the Face appearing in the Orb of the Moon," attributed to Plutarch, and printed with his *Morals:*

"'An isle, Ogygia, lies in Ocean's arms,'" says the narrator, "about five days' sail west from Britain; and before it are three others, of equal distance from one another, and also from that, bearing northwest, where the sun sets in summer. In one of these the barbarians feign that Saturn is detained in prison by Zeus." The adjacent sea is termed the Saturnian, and the continent by which the great sea is circularly environed is distant from Ogygia about five thousand stadia, but from the other islands not so far. A bay of this continent, in the latitude of the Caspian Sea, is inhabited by Greeks. These, who had been visited by Heracles, and revived by his followers, esteemed themselves inhabitants of the firm land, calling all others islanders, as dwelling in land encompassed by the sea. Every thirty years these people send forth certain of their number, who minister to the imprisoned Saturn for thirty years. One of the men thus sent forth, at the end of his service, paid a visit to the great island, as they called Europe. From him the narrator learned many things about the state of men after death, which he unfolds at length, the conclusion being that the souls of men ultimately arrive at the moon, wherein lie the Elysian Fields of Homer. "And you, O Lamprias," he adds, "may take my relation in such part as you please." After which hint there is, I think, but little doubt as to the way in which it should be taken by us.[1]

That Plato, Theopompus, and Plutarch, covering a range of nearly five centuries, should each have made use of the conception of a continent beyond the Atlantic, is noteworthy; but it is more naturally accounted for by supposing that all three had in mind the continental hypothesis of land distribution, than by assuming for them an acquaintance with the great western island, America. From this point of view, the result of our search into the geographical knowledge and mythical tales of the ancients is purely negative. We find, indeed, well-developed theories of physical geography, one of which accords remarkably well with the truth; but we also find that these theories rest solely on logical deductions from the mathematical doctrine of the sphere, and on an æsthetic satisfaction with symmetry and analogy. This conclusion could be invalidated were it shown that exploration had already revealed the secrets of the west, and we must now consider this branch of the subject.

The history of maritime discovery begins among the Phœnicians. The civilization of Egypt, as self-centred as that of China, accepted only the commerce that was brought to its gates; but the men of Sidon and Tyre, with their keen devotion to material interests, their almost modern ingenuity, had early appropriated the carrying trade of the east and the west. As they looked adventurously seaward from their narrow domain, the dim outline of Cyprus beckoned them down a long lane of island stations to the rich shores of Spain. Even their religion betrayed their bent: El and Cronos, their oldest deities, were wanderers, and vanished in the west; on their traces Melkarth led a motley swarm of colonists to the Atlantic. These legends, filtering through Cyprus, Crete, or Rhodes, or borne by rash adventurers from distant Gades, appeared anew in Grecian mythology, the deeds of Melkarth mingling with the labors of Hercules. We do not know when the Phœnicians first reached the Atlantic, nor what were the limits of their ocean voyages. Gades, the present Cadiz, just outside the Straits of Gibraltar, was founded a few years before 1100 B. C., but not, it is probable, without previous knowledge of the commercial importance of the location. There were numerous other settlements along the adjacent coast, and the gold, silver, and tin of these distant regions grew familiar in the markets of Egypt, Mesopotamia, and India. The trade with Tartessus, the El Dorado of antiquity, gave the Phœnician merchant vessels a name among the Jews, as well in the tenth century, when Solomon shared the adventures of Hiram, as in the sixth, when Ezekiel depicted the glories of Tyrian commerce. The Phœnician seamanship was wide-famed; their vessels were unmatched in speed,[1] and their furniture and discipline excited the outspoken admiration of Xenophon. Beside the large Tarshish ships, they possessed light merchant vessels and ships of war, provided with both sails and oars, and these, somewhat akin to steamships in their independence of wind, were well adapted for exploration. Thus urged and thus provided, it is improbable that the Phœnicians shunned the great ocean. The evidence is still strong in favor of their direct trade with Britain for tin, despite what has been urged as to tin mines in Spain and the prehistoric existence of the trade by land across Gaul.[2]

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[1] *Mare Cronium* was the name given to a portion of the northern ocean. Forbiger, *Handbuch*, ii. 3, note 9.

Whether the Tyrians discovered any of the Atlantic islands is unknown; the adventures and discoveries attributed to Hercules, who in this aspect is but Melkarth in Grecian raiment, points toward an early knowledge of western islands, but these myths alone are not conclusive proof. Diodorus Siculus attributes to the Phœnicians the discovery, by accident, of a large island, with navigable rivers and a delightful climate, many days' sail westward from Africa. In the compilation *De Mirabilibus Auscultationibus*, printed with the works of Aristotle, the discovery is attributed to Carthaginians. Both versions descend from one original, now lost, and it is impossible to give a date to the event, or to identify the locality.[1] Those who find America in the island of Diodorus make improbabilities supply the lack of evidence. Stories seldom lose in the telling, and while it is not impossible that a Phœnician ship might have reached America, and even made her way back, it is not likely that the voyage would have been tamely described as of many *days*' duration.

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[1] The average of all known rates of speed with ancient ships is about five knots an hour; some of the fastest runs were at the rate of seven knots, or a little more. Breusing, *Nautik der Alten*, Bremen, 1886, pp. 11, 12. Movers, *Die Phœnizier*, ii. 3, 190. Movers estimates the rate of a Phœnician vessel with 180 oarsmen at double that of a Greek merchantman. He compares the sailing qualities of Phœnician vessels with those of Venice in the Middle Ages to the disadvantage of the latter. As the ancients had nothing answering to our log, and their contrivances for time-keeping were neither trustworthy nor adapted for use on shipboard, these estimates are necessarily based on a few reports of the number of days spent on voyages of known length, — a rather uncertain method.

[2] Tin exists in some of the islands of the Indian Ocean, and they were worked at a later period, but there is no direct evidence, as far as I am aware, that they were known at the date when Tyre was most flourishing.

When Carthage succeeded Tyre as mistress of the Mediterranean commerce, interest in the West revived. In the middle of the fifth century B. C., two expeditions of importance were dispatched into these waters. A large fleet under Hanno sailed to colonize, or re-colonize, the western coast of Africa, and succeeded in reaching the latitude of Sierra Leone. Himilko, voyaging in the opposite direction, spent several months in exploring the ocean and tracing the western shores of Europe. He appears to have run into the Sargasso Sea, but beyond this little is known of his adventures.[2]

Ultimately the Carthaginians discovered and colonized the Canary Islands, and perhaps the Madeira and Cape Verde groups; the evidence of ethnology, the presence of Semitic inscriptions, and the occurrence in the descriptions of Pliny, Mela, and Ptolemy of some of the modern names of the separate islands, establishes this beyond a doubt for the Canaries.[3] There is no evidence that the Phœnicians or Carthaginians penetrated much beyond the coast islands, or that they reached any part of America, or even the Azores.

The achievements of the Greeks and Romans were still more limited. A certain Colaeus visited Gades towards the middle of the seventh century B. C., and was, according to Herodotus, the first Greek who passed outside of the columns of Hercules. His example could not have been widely followed, for we find Pindar and his successors referring to the Pillars a the limit of navigation. In 600 B. C., Massilia was founded, and soo became a rival of Carthage in the western Mediterranean. In the fourt century we have evidence of an attempt to search out the secrets of th ocean after the manner of Hanno and Himilko. In that century, Pythea made his famous voyage to the lands of tin and amber, discovering th still mysterious Thule; while at the same time his countryman Euthy menes sailed southward to the Senegal. With these exceptions we hea of no Grecian or Roman explorations in the Atlantic, and meet with n indication that they were aware of any other lands beyond the sea tha the Fortunate Isles or the Hesperides of the early poets.[1]

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[1] Diodorus Siculus, v. 18, 19; *De Mirab. Auscult.*, 84. Müllenhof, *Deutsche Alterthumskunde*, i., Berlin, 1870, p. 467, traces the report through the historian Timaeus to Punic sources.

[2] The narration of Hanno's voyage has been preserved, apparently in the words of the commander's report. *Geographi Graeci minores*, ed. Mueller (Paris, 1855), i. pp. 1–14. Cf. also *Prolegom.*, pp. xviii, xxiii. Our only notion of the date of the expedition is derived from Pliny, *Hist. Nat.*, v. i. § 7, who says: "Fuere et Hannonis Carthaginiensium ducis commentarii, *Punicis rebus florentissimis* explorare ambitum Africae jussi." All that is known of Himilko is derived from the statement of Pliny, *Hist. Nat.*, ii. 67, that he was sent at about the same time as Hanno to explore the distant regions of Europe; and from the poems of Avienus, who wrote in the fourth century, and professed to give, in the *Ora Maritima*, many extracts from the writings of Himilko. The description of the difficulties of navigation in the Atlantic is best known. In his *Deutsche Alterthumskunde* (Berlin, 1870), i. pp. 73–210, Muellenhof has devoted especial attention to an analysis of this record.

[3] Pliny, *Hist. Nat.*, vi. 36, 37; Mela, iii. 100, etc.; Solinus, 23, 56 [ed. Mommsen, p. 117, 230]; Ptolemy, *Geogr.*, iv. 6; *Rapport sur une mission scientifique dans l'archipel Canarienne*, par M. le docteur Verneau; 1877. In *Archives des Missions Scientifique et Litteraires*, 3^{e} série, tom. xiii. pp. 569, etc. The presence of Semites is indicated in Gran Canaria, Ferro, Palma, and the inscriptions agree in character with those found in Numidia by Gen. Faidherbe. In Gomera and Teneriffe, where the Guanche stock is purest, there have been no inscriptions found. Dr. Verneau believes that the Guanches are not descended from Atlantes or Americans, but from the Quaternary men of Cro-magnon on the Vézère; he found, however, traces of an unknown brachycephalic race in Gomera.

About 80 B. C., Sertorius, being for a time driven from Spain by th forces of Sulla, fell in, when on an expedition to Baetica, with certai sailors who had just returned from the "Atlantic islands," which the described as two in number, distant 10,000 stadia from Africa, and enjoying a wonderful climate. The account in Plutarch is quite consistent with a previous knowledge of the islands, even on the part of Sertorius. Be this as it may, the glowing praises of the eye-witnesses so impressed him that only the unwillingness of his followers prevented his taking refuge there. Within the next few years, the Canaries, at least, became well known as the *Fortunatae Insulae;* but when Horace, in the dark days of civil war, urged his countrymen to seek a new home across the waves, it was apparently the islands of Sertorius that he had in mind, regarding them as unknown to other peoples.[1]

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[1] In the second century, A. D., Pausanias (*Desc. Graec.*, i. 23) was told by Euphemus, a Carian, that once, on a voyage to Italy, he had been driven to the sea outside [ἐς τὴν ἔξω θάλασσαν], where people no longer sailed, and where he fell in with many desert islands, some inhabited by wild men, red-haired, and with tails, whom the sailors called Satyrs. Nothing more is known of these islands. Ἔξω has here been rendered simply "distant"; but even in this sense it could hardly apply in the time of Pausanias to any region but the Atlantic. It is more probable that the phrase means "outside the columns."

In the first century B. C., some men of an unknown race were cast by the sea on the German coast. There is nothing to show that these men were American Indians; but since that has been sometimes assumed, the matter should not be passed over here. The event is mentioned by Mela (*De Chorogr.*, iii. 5, § 8), and by Pliny (*Hist. Nat.*, ii. 67); the castaways were forwarded to the proconsul, Q. Caecilius Metellus Celer (B. C. 62), by the king of the tribe within whose territory they were found. Pliny calls the tribe the *Suevi;* the reading in Mela is very uncertain. Parthey has *Botorum*, the older editors *Baetorum*, or *Boiorum*. The Romans took them for inhabitants of India, who had been carried around the north of Europe; modern writers have seen in them Africans, Celts, Lapps, or Caribs. A careful study of the whole subject, with references to the literature, will be found in an article by F. Schiern: *Un énigme ethnographique de l'antiquité*, contributed to the Memoirs of the Royal Society of Northern Antiquaries, New Series, 1878–83, pp. 245–288.

In the Louvre is an antique bronze which has been thought to represent one of the Indians of Mela, and also to be a good reproduction of the features of the North American Indian (Longpérier, *Notice des bronzes antiques*, etc., *du Musée du Louvre*, Paris, 1868, p. 143), but the suppos tion is purely arbitrary.

Such an event as an involuntary voyage fro the West Indies to the shores of Europe is n an impossibility, nor is the case cited by Me and Pliny the only one of the kind which we fin recorded. Gomara (*Hist. gen. de las Indias*, says some savages were thrown upon the Ge man coast in the reign of Frederic Barbaross (1152–1190), and Aeneas Silvius (Pius II.) pro ably refers to the same event when he quotes certain Otho as relating the capture on the coa of Germany, in the time of the German emp rors, of an Indian ship and Indian traders (me catores). The identity of Otho is uncertai Otto of Freisingen († 1158) is probably mean but the passage does not appear in his work that have been preserved (Aeneas Silvius, *Hi toria rerum*, ii. 8, first edition, Venice, 1477 The most curious story, however, is that relate by Cardinal Bembo in his history of Venice (fir published 1551), and quoted by Horn (*De ori Amer.*, 14), Garcia (iv. 29), and others. It d serves, however, record here. "A French shi while cruising in the ocean not far from Brita picked up a little boat made of split oziers an covered with bark taken whole from the tre in it were seven men of moderate height, rath dark complexion, broad and open faces, marke with a violet scar. They had a garment of fis skin with spots of divers shades, and wore headgear of painted straw, interwoven with seve things like ears, as it were (coronam e culm pictam septem quasi auriculis intextam). The ate raw flesh, and drank blood as we wine. The speech could not be understood. Six of the died; one, a youth, was brought alive to Roan (so the Italian; the Latin has Aulercos), whe the king was" (Louis XII.). Bembo, *Reru Venetarum Hist.* vii. year, 1508. [*Opere*, Venic 1729, i. 188.]

As we trace the increasing volume and extent of commerce from the days of Tyre and Carthage and Alexandria to its fullest development under the empire, and remember that as the drafts of luxury-loving Rome upon the products of the east, even of China and farther India, increased, the true knowledge of the form of the earth, and the underestimate of the breadth of the western ocean, became more widely known, the question inevitably suggests itself, Why did not the enterprise which had long since utilized the monsoons of the Indian Ocean for direct passage to and from India essay the passage of the Atlantic? The inquiry gains force as we recall that the possibility of such a route to India had been long ago asserted. Aristotle suggested, if he did not express it; Eratosthenes stated plainly that were it not for the extent of the Atlantic it would be possible to sail from Spain to India along the same parallel;[2] and Strabo could object nothing but the chance of there being another island-continent or two in the way, — an objection unknown to Columbus. Seneca, the philosopher, iterating insistence upon the smallness of the earth and the pettiness of its affairs compared with the higher interests of the soul, exclaims: "The earth, which you so anxiously divide by fire and sword into kingdoms, is a point, a mere point, in the universe. . . . How far is it from the utmost shores of Spain to those of India? But very few days' sail with a favoring wind."[3]

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[1] Nos manet Oceanus circumvagus; arva, beata
Petamus arva, divites et insulas,
Reddit ubi Cererem tellus inarata quotannis
Et inputata floret usque vinea.
. . . .
Non huc Argoo contendit remige pinus,
Neque inpudica Colchis intulit pedem;
Non huc Sidonii torserunt cornua nautae,
Laboriosa nec cohors Ulixei.
Juppiter illa piae secrevit litora genti,
Ut inquinavit aere tempus aureum;
Aere, dehinc ferro duravit saecula, quorum
Piis secunda, vate me, datur fuga.
(Horace, *Epode*, xvi.)

Virgil, in the well-known lines in the prophecy of Anchises —

Super et Garamantes et Indos
Proferet inperium; iacet extra sidera tellus,
Extra anni solisque vias, ubi caelifer Atlas
Axem humero torquet stellis ardentibus aptum —
(*Æneid*, vi. 795.)

had Africa rather than the west in mind, according to the commentators.

It is possible that the islands described to Sertorius were Madeira and Porto Santo, but the distance was much overestimated in this case.

[2] "He [Eratosthenes] says that if the extent of the Atlantic Ocean were not an obstacle, we might easily pass by sea from Iberia to India, still keeping in the same parallel, the remaining portion of which parallel . . . occupies more than a third of the whole circle. . . . But it is quite possible that in the temperate zone there may be two or even more habitable earths [*οἰκουμένας*], especially near the circle of latitude which is drawn through Athens and the Atlantic ocean." (Strabo, *Geogr.*, i. 4, § 6.)

[3] Seneca, *Naturalium Quaest. Praefatio.* The

Holding these views of the possibility of the voyage, it is improbable that the size of their ships and the lack of the compass could have long prevented the ancients from putting them in practice had their interest so demanded.[1] Their interest in the matter was, however, purely speculative, since, under the unity and power of the Roman empire, which succeeded to and absorbed the commercial supremacy of the Phœnicians, international competition in trade did not exist, nor were the routes of trade subject to effective hostile interruption. The two causes, therefore, which worked powerfully to induce the voyages of Da Gama and Columbus, after the rise of individual states had given scope to national jealousy and pride, and after the fall of Constantinople had placed the last natural gateway of the eastern trade in the hands of Arab infidels, were non-existent under the older civilization. It is certain, too, that the ancients had a vivid horror of the western ocean. In the Odyssey, the western Mediterranean even is full of peril. With knowledge of the ocean, the Greeks received tales of "Gorgons and Chimeras dire," and the very poets who sing the beauties of the Elysian or Hesperian isles dwell on the danger of the surrounding sea. Beyond Gades, declared Pindar, no man, however brave, could pass; only a god might voyage those waters. The same idea recurs in the reports of travellers and the writings of men of science, but here it is the storms, or more often the lack of wind, the viscid water or vast shoals, that check and appall the mariner. Aristotle thought that beyond the columns the sea was shallow and becalmed. Plato utilized the common idea of the mud-banks and shoal water of the Atlantic in accounting for the disappearance of Atlantis. Scylax reported the ocean not navigable beyond Cerne in the south, and Pytheas heard that beyond Thule sea and air became confounded. Even Tacitus believed that there was a peculiar resistance in the waters of the northern ocean.[2]

Whether the Greeks owed this dread to the Phœnicians, and whether the latter shared the feeling, or simulated and encouraged it for the purpose of concealing their profitable adventures beyond the Straits, is doubtful. In two cases, at least, it is possible to trace statements of this nature to Punic

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passage is certainly striking, but those who, like Baron Zach, base upon it the conclusion that American voyagers were common in the days of Seneca overestimate its force. It is certainly evident that Seneca, relying on his knowledge of theoretical geography, underestimated the distance to India. Had the length of the voyage to America been known, he would not have used the illustration.

[1] Smaller vessels even than were then afloat have crossed the Atlantic, and the passage from the Canaries is hardly more difficult than the Indian navigation. The Pacific islanders make voyages of days' duration by the stars alone to goals infinitely smaller than the broadside of Asia, to which the ancients would have supposed themselves addressed.

[2] Aristotle, *Meteorolog.*, ii. 1, § 14; Plato, *Timaeus*; Scylax Caryandensis, *Periplus*, 112. *τῆς Κέρνης δὲ νήσου τὰ ἐπέκεινα οὐκέτι ἐστὶ πλωτὰ διὰ βραχύτητα θαλάττης καὶ πηλὸν καὶ φῦκος* (*Geogr. Graec. min.*, ed. Mueller, i. 93; other references in the notes). Pytheas in Strabo, ii. 4, § 1; Tacitus, *Germania*, 45, 1; *Agricola*, x. A gloss to Suidas applies the name Atlantic to all innavigable seas. Pausanias, i. ch. 3, § 6, says it contained strange sea-beasts, and was not navigable in its more distant parts. A long list of references to similar passages is given by Ukert, *Geogr. der Griechen u. Römer*, ii. 1, p. 59. See also Berger, *Wissenschaftliche Geographie*, i. p. 27, note 3, and Grote, *Hist. of Greece*, iii. ch. 18, notes.

sources, and antiquity agreed in giving the Phœnicians credit for discouraging rivalry by every art.[1]

To an age averse to investigation for its own sake, ignorant of scientific curiosity, and unimpelled by economic pressure, tales like these might seem decisive against an attempt to sail westward to India. Rome could thoroughly appreciate the imaginative mingling of science and legend which vivified the famous prophecy of the poet Seneca:

> Venient annis saecula seris
> Quibus Oceanus vincula rerum
> Laxet, et ingens patebit tellus
> Tethysque novos deteget orbes
> Nec sit terris ultima Thule.[2]

But even were it overlooked that the prophecy suited better the revelation of an unknown continent, such as the theory of Crates and Cicero placed between Europe and Asia, than the discovery of the eastern coast of India, mariners and merchants might be pardoned if they set the deterrent opinions collected by the elder Seneca above the livelier fancies of his son.[3]

The scanty records of navigation and discovery in the western waters confirm the conclusions drawn from the visions of the poets and the theories of the philosophers. No evidence from the classic writers justifies the assumption that the ancients communicated with America. If they guessed at the possibility of such a continent, it was only as we to-day imagine an antarctic continent or an open polar sea. Evidence from ethnological comparisons is of course admissible, but those who are best fitted to handle such evidence best know its dangers; hitherto its use has brought little but discredit to the cause in which it was invoked.

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[1] *De Mirab. Auscult.*, 136. The Phœnicians are said to have discovered beyond Gades extensive shoals abounding in fish.

> Quae Himilco Poenus mensibus vix quatuor,
> Ut ipse semet re probasse retulit
> Enavigantem, posse transmitti adserit:
> Sic nulla late flabra propellunt ratem,
> Sic segnis humor aequoris pigri stupet.
> Adjecit et illud, plurimum inter gurgites
> Extare fucum, et saepe virgulti vice
> Retinere puppim: dicit hic nihilominus,
> Non in profundum terga dimitti maris,
> Parvoque aquarum vix supertexi solum:
> Obire semper huc et huc ponti feras,
> Navigia lenta et languide repentia
> Internatare belluas.
> (Avienus, *Ora Maritima*, 115–130.)

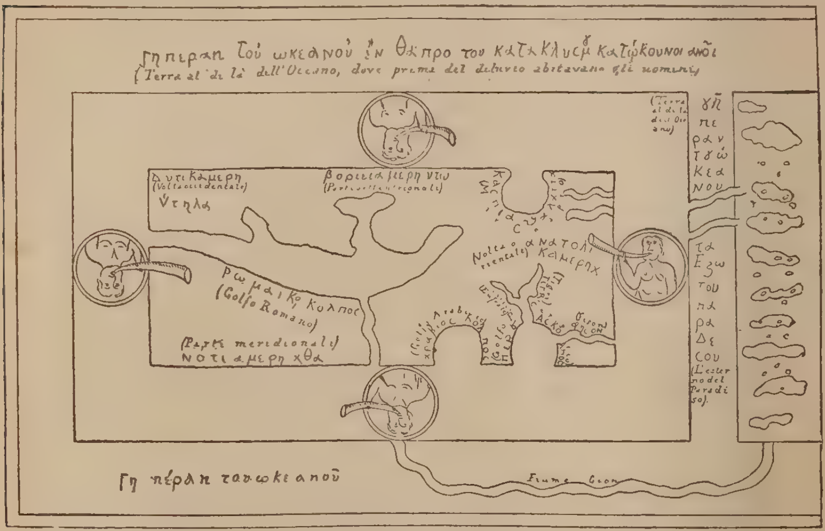
> Hunc usus olim dixit Oceanum vetus,
> Alterque dixit mos Atlanticum mare.
> Longo explicatur gurges hujus ambitu,
> Produciturque latere prolixe vago.
> Plerumque porro tenue tenditur salum,
> Ut vix arenas subjacentes occulat.
> Exsuperat autem gurgitem fucus frequens,
> Atque impeditur aestus hic uligine:
> Vis belluarum pelagus omne internatat,
> Multusque terror ex feris habitat freta.
> Haec olim Himilcos Poenus Oceano super
> Spectasse semet et probasse retulit:
> Haec nos, ab imis Punicorum annalibus
> Prolata longo tempore, edidimus tibi. (*Ibid.* 402–415.)

Whether Avienus had immediate knowledge of these Punic sources is quite unknown.

[2] Seneca, *Medea*, 376–380.

[3] In the first book of his *Suasoriæ*, M. Annaeus Seneca collected a number of examples illustrative of the manner in which several of the famous orators and rhetoricians of his time had handled the subject, *Deliberat Alexander, an Oceanum naviget*, which appears to have been one of a number of stock subjects for use in rhetorical training. This collection thus gives a good view of the prevalent views about the ocean, and certainly tells strongly against the idea that the western passage was then known or practised. "Fertiles in Oceano jacere terras, ultraque Oceanum rursus alia littora, alium nasci orbem, . . . *facile ista finguntur; quia Oceanus navigari non potest* . . . confusa lux alta caligine, et interceptus tenebris dies, ipsum veros grave et devium mare, et aut nulla, aut ignota sidera. Ita est, Alexander, rerum natura; *post omnia Oceanus, post Oceanum nihil.* . . . Immensum, et humanae intentatum experientiae pelagus, totius orbis vinculum, terrarumque custodia, inagitata remigio vastitas. . . . Fabianus . . . divisit enim illam [quaestionem] sic, ut primum negaret ullas in Oceano, aut trans Oceanum, esse terras habitabiles: deinde si essent, perveniri tamen ad illas non posse. Hic difficultatem ignoti maris, naturam non patientem navigationis."

The geographical doctrines which antiquity bequeathed to the Middle Ages were briefly these: that the earth was a sphere with a circumference of 252,000 or 180,000 stadia; that only the temperate zones were inhabitable, and the northern alone known to be inhabited; that of the southern, owing to the impassable heats of the torrid zone, it could not be discovered whether it were inhabited, or whether, indeed, land existed there; and that of the northern, it was unknown whether the intervention of another continent, or only the shoals and unknown horrors of the ocean, prevented a westward passage from Europe to Asia. The legatee preserved, but did not improve his inheritance. It has been supposed that the early Middle Ages, under the influence of barbarism and Christianity, ignored the sphericity of the earth, deliberately returning to the assumption of a plane surface, either wheel-shaped or rectangular. That knowledge dwindled after the fall of the empire, that the early church included the learning as well as the religion of the pagans in its ban, is undeniable; but on this point truth prevailed. It was preserved by many school-books, in many popular



THE RECTANGULAR EARTH.*

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* Sketched in the *Bollettino della Società geografica italiana* (Roma, 1882), p. 540, from the original in the Biblioteca Medicea Laurenziana in Florence. The representation of this sketch of the earth by Cosmas Indicopleustes more commonly met with is from the engraving in the edition of Cosmas in Montfaucon's *Collectio nova patrum*, Paris, 1706. The article by Marinelli which contains the sketch given here has also appeared separately in a German translation (*Die Erdkunde bei den Kirchenvätern*, Leipzig, 1884). The continental land beyond the ocean should be noticed.

compilations from classic authors, and was accepted by many ecclesiastics. St. Augustine did not deny the sphericity of the earth. It was assumed by Isidor of Seville, and taught by Bede.[1] The schoolmen buttressed the doctrine by the authority of Aristotle and the living science which the Arabs built upon the Almagest. Gerbert, Albert the Great, Roger Bacon, Dante, were as familiar with the idea of the earth-globe as were Hipparchus and Ptolemy. The knowledge of it came to Columbus not as an inspiration or an invention, but by long, unbroken descent from its unknown Grecian, or pre-Grecian, discoverer.

As to the distribution of land and water, the oceanic theory of Crates, as expounded by Macrobius, prevailed in the west, although the existence of antipodes fell a victim to the union, in the ecclesiastic mind, of the heathen heory of an impassable torrid zone with the Christian teaching of the descent of all men from Adam.[2] The discoveries made by the ancients in the ocean, of the Canaries and other islands known to them, were speedily forgotten, while their geographic myths were superseded by a ranker growth. The Saturnian continent, Meropis, Atlantis, the Fortunate Isles, the Hesperides, were relegated to the dusty realm of classical learning; but the Atlantic was not barren of their like. Mediæval maps swarmed with fabuous islands, and wild stories of adventurous voyages divided the attention with tales of love and war. Antillia was the largest, and perhaps the most amous, of these islands; it was situated in longitude 330° east, and near he latitude of Lisbon, so that Toscanelli regarded it as much facilitating he plan of Columbus. Well known, too, was Braçir, or Brazil, having its roper position west and north of Ireland, but often met with elsewhere; oth this island and Antillia afterward gave names to portions of the new ontinent.[3]

Antillia, otherwise called the Island of Seven Cities, was discovered and ettled by an archbishop and six bishops of Spain, who fled into the ocean fter the victory of the Moors, in 714, over Roderick; it is even reported o have been rediscovered in 1447.[4] Mayda, Danmar, Man Satanaxio, Isla Verde, and others of these islands, of which but little is known beside the ames, appear for the first time upon the maps of the fourteenth and fifteenth centuries, but their origin is quite unknown. It might be thought hat they were derived from confused traditions of their classical predecessors, with which they have been identified, but modern folk-lore ha shown that such fancies spring up spontaneously in every communit To dream of a distant spot where joy is untroubled and rest unbroken b grief or toil is a natural and inalienable bent of the human mind. Thos happy islands which abound in the romances of the heathen Celts, Ma Mell, Field of Delight, Flath Inis, Isle of the Heroes, the Avallon of th Arthur cycle, were but a more exuberant forth-putting of the same so that produced the Elysian Fields of Homer or the terrestrial paradise of th Hebrews. The later growth is not born of the seed of the earlier, thoug somewhat affected by alien grafts, as in the case of the famous island St. Brandan, where there is a curious commingling of Celtic, Greek, an Christian traditions. It is dangerous, indeed, to speak of earlier or late in reference to such myths; one group was written before the others, bu it is quite possible that the earthly paradise of the Celt is as old as thos of the Mediterranean peoples. The idea of a phantom or vanishing i land, too, is very old, — as old, doubtless, as the fact of fog-banks an mirage, — and it is well exemplified in those mysterious visions which en ticed the sailors of Bristol to many a fruitless quest before the discovery America, and for centuries tantalized the inhabitants of the Canaries wit hope of discovery. The Atlantic islands were not all isles of the blesse there were many Isles of Demons, such as Ramusio places north of Ne foundland, a name of evil report which afterward attached itself with mo reason to Sable Island and even to the Bermudas:

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[1] Virgil, bishop of Salzburg, was accused before Pope Zacharias by St. Boniface of teaching he doctrine of antipodes; for this, and not for is belief in the sphericity of the earth (as I read), e was threatened by the Pope with expulsion om the church. The authority for this story is letter from the Pope to Boniface. See Marielli, *Die Erdkunde bei den Kirchenvätern*, . 42.

[2] Cosmas, as will be seen in the cut, adhered o the continental theory, placing Paradise on the continent in the east. Paradise was more commonly placed in an island east of Asia.

[3] It has been suggested by M. Beauvois that Labrador may in the same way derive its name from *Inis Labrada*, or the Island of Labraid, which figures in an ancient Celtic romance. The conjecture has only the phonetic resemblance to recommend it. Beauvois, *L'Elysée transatlantique* (*Revue de l'Histoire des Religions*, vii. (1883), p. 291, n. 3).

[4] Gaffarel, P., *Les isles fantastiques de l'Atlantique au moyen âge*, 3.

> "Kept, as suppos'd by Hel's infernal dogs;
> Our fleet found there most honest courteous hogs."[1]

Not until the revival of classical learning did the continental system Ptolemy reach the west; the way, however, had been prepared for it. Th measurement of a degree, executed under the Calif Mamun, seemed to th Europeans to confirm the smallest estimate of the size of the earth, whic Ptolemy also had adopted,[2] while the travels of Marco Polo, revealing th great island of Japan, exaggerated the popular idea of the extent of th known world, until the 225° of Marinus seemed more probable than th 180° of Ptolemy. If, however, time brought this shrinkage in the bread of the Atlantic, the temptation to navigators was opposed by the belief the dangers of the ocean, which shared the persistent life of the dogn of the impassable torrid zone, and was strongly reinforced by Arab lor Their geographers never tire of dilating on the calms and storms, mu banks and fogs, and unknown dangers of the "Sea of Darkness." Neve theless, as the turmoil of mediæval life made gentler spirits sigh for pea in distant homes, while the wild energy of others found the very dange of the sea delightful, there was opened a double source of adventures, both real and imaginary. Those pillars cut with inscriptions forbidding further advance westward, which we owe to Moorish fancy, confounding Hercules and Atlas and Alexander, were transformed into a knightly hero pointing oceanwards, or became guide-posts to the earthly paradise.

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[1] Coryat's *Crudities*, London, 1611. Sig. h (4), verso.

[2] The result of the Arabian measurements gave 56⅔ miles to a degree. Arabian miles were meant, and as these contain, according to Peschel (*Geschichte der Geographie*, p. 134), 4,0 ells of 540.7^{mm}., the degree equalled 122,558. The Europeans, however, thought that Rom miles were meant, and so got but $83,866.6^{m}$. t degree.

If there be a legendary flavor in the flight of the seven bishops, we must set down the wanderings of the Magrurin[1] among the African islands, the futile but bold attempts of the Visconti to circumnavigate Africa, as real, though without the least footing in a list of claimants for the discovery of America. The voyages of St. Brandan and St. Malo, again, are distinctly fabulous, and but other forms of the ancient myth of the soul-voyages; and the same may be said of the strange tale of Maelduin.[2] But what of those other Irish voyages to Irland-it-mikla and Huitramannaland, of the voyage of Madoc, of the explorations of the Zeni? While these tales merit close investigation, it is certain that whatever liftings of the veil there may have been — that there were any is extremely doubtful — were unheralded at the time and soon forgotten.[3]

It was reserved for the demands of commerce to reveal the secrets of the west. But when the veil was finally removed it was easy for men to see that it had never been quite opaque. The learned turned naturally to their new-found classics, and were not slow to find the passages which seemed prophetic of America. Seneca, Virgil, Horace, Aristotle, and Theopompus, were soon pressed into the service, and the story of Atlantis obtained at once a new importance. I have tried to show in this chapter that these patrons of a revived learning put upon these statements an interpretation which they will not bear.

The summing up of the whole matter cannot be better given than in the words applied by a careful Grecian historian to another question in ancient geography: "In some future time perhaps our pains may lead us to a knowledge of those countries. But all that has hitherto been written or reported of them must be considered as mere fable and invention, and not the fruit of any real search, or genuine information."[4]

CRITICAL ESSAY ON THE SOURCES OF INFORMATION.

THE views of the ancient Mediterranean peoples upon geography are preserved almost solely in the ancient classics. The poems attributed to Homer and Hesiod, the so-called Orphic hymns, the odes of Pindar, even the dramatic works of Æschylus and his successors, are sources for the earlier time. The writings of the earlier philosophers are lost, and their ideas are to be found in later writers, and in compilations like the Biographies of Diogenes Laertius (3d cent. A. D.), the *De placitis philosophorum* attributed to Plutarch, and the like. Among the works of Plato the *Phaedo* and *Timaeus* and the last book of the *Republic* bear on the form and arrangement of the earth; the *Timaeus* and *Critias* contain the fable of Atlantis. The first scientific treatises preserved are the *De Caelo* and *Meteorologica* of Aristotle.[1] It is needless to speak in detail of the geographical writers, accounts of whom will be found in any history of Greek and Roman literature. The minor pieces, such as the *Periplus* of Hanno, of Scylax of Caryanda, of Dionysius Periegetes, the Geography of Agatharcides, and others, have been several times collected;[2] and so have the minor historians, which may be consulted for Theopompus, Hecataeus, and the mythologists.[3] The geographical works of Pytheas (B. C. 350 ?), of Eratosthenes (B. C. 276–126), of Polybius (B. C. 204–122), of Hipparchus (flor. circ. B. C. 125), of Posidonius (1st cent. B. C.), are preserved only in quotations made by later writers; they have, however, been collected and edited in convenient form.[4] The most important source of our knowledge of Greek geography and Greek geographers is of course the great *Geography* of Strabo, which a happy fortune preserved to us. The long introduction upon the nature of geography and the size of the earth and the dimensions of the known world is of especial interest, both for his own views and for those he criticises.[5] Strabo lived about B. C. 60 to A. D. 24.

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[1] Edrisi, *Geography*, Climate, iv., § 1, Jaubert's translation, Paris, 1836, ii. 26.

[2] Found in various Celtic MSS. See Beauvois, *L'Eden occidentale* (*Rev. de l'Hist. des Relig.*), viii. (1884), 706, etc.; Joyce, *Old Celtic Romances*, 112–176.

[3] These alleged voyages are considered in the next chapter.

[4] Polybius, *Hist.*, iii. 38.

The works of Marinus of Tyre having perished, the next important geographical work in Greek is the world-renowned *Geography* of Ptolemaeus, who wrote in the second half of the second century A. D. Despite the peculiar merits and history of this work, it is not so important for our purpose as the work of Strabo, though it exercised infinitely more influence on the Middle Ages and on early modern geography.[6]

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[1] The tract *On the World* (περὶ κόσμου, *de mundo*), and the *Strange Stories* (περὶ θαυμασίων ἀκουσμάτων, *de mirabilibus auscultationibus*), printed with the works of Aristotle, are held to be spurious by critics: the former, which gives a good summary of the oceanic theory of the distribution of land and water (ch. 3), is considerably later in date; the latter is a compilation made from Aristotle and other writers. Muellenhof has sought partially to analyze it in his *Deutsche Alterthumskunde*, i. 426, etc.

[2] First in *Geographica Marciani, Scylacis, Artemidoris, Dicæarchi, Isidori. Ed. a Hoeschelio* (Aug. Vind., 1600). The great collection made by Hudson, *Geographiae veteris scriptores Graeci minores* (4 vols., Oxon., 1698–1712; re-edited by Gail, Paris, 1826, 6 vols.), is still useful, notwithstanding the handy edition by C. Mueller in the Didot classics, *Geographiae Graeci minores* (Paris, 1855–61. 2 vols. and atlas).

[3] *Fragmenta historicorum Graecorum. Ed. C. et T. Mueller* (Paris, Didot, 1841–68. 5 vols.).

[4] *Die geographischen Fragmente des Hipparchus: H. Berger* (Leipzig, 1869); *Posidonii Rhodii reliquiae doctrinae: coll. J. Bake* (Lugd. Bat., 1810); *Eratosthenica composuit G. Bernhardy* (Berlin, 1822); *Die geographischen Fragmente des Eratosthenes: H. Berger* (Leipzig, 1880).

[5] *Strabonis Geographia* (Romae, Suweynheym et Pannartz, s. a.), in 1469 or 1470, folio. First edition of the Latin translation which was made by Guarini of Verona, and Lilius Gregorius of Tiferno; only 275 copies were printed. It was reprinted in 1472 (Venice), 1473 (Rome), 1480 (Tarvisii), 1494 (Venice), 1502 (Venice), 1510 (Venice), and 1512 (Paris). *Strabo de situ orbis* (Venice. Aldus et Andr. Soc., 1516), fol., was the first Greek edition; a better edition appeared in 1549 (Basil., fol.), with Guarini's and Gregorius's translation revised by Glareanus and others. Critical ed. by J. Kramer (Berlin, 1844), 3 vols. Ed. with Latin trans. by C. Müller and F. Dübner (Paris, Didot, 1853, 1857). It has since been edited by August Meineke (Leipsic, Teubner, 1866. 3 vols. 8vo).

There was an Italian translation by Buonacciuoli, in Venice and Ferrara, 1562, 1585. 2 vols. The Γεωγραφικὰ has been several times translated into German, by Penzel (Lemgo, 1775–1777, 4 Bde. 8vo), Groskund (Berlin, Stettin, 1831–1834. 4 Thle.), and Forbiger (Stuttgart, 1856–1862. 2 Bde.), and very recently into English by H. C. Hamilton and W. Falconer (London, Bell [Bohn], 1887). 3 vols. This has a useful index.

The great French translation of Strabo, made by order of Napoleon, with very full notes by Gosselin and others, is still the most useful translation: *Géographie du Strabon trad. du grec en française* (Paris, 1805–1819). 5 vols. 4to.

[6] The Geography was first printed, in a Latin translation, at Vincentia, in 1475; the date 1462 in the Bononia edition being recognized as a misprint, probably for 1482. The history of the book has been described by Lelewel in the appendix to his *Histoire de la Géographie*, and more

The astronomical writers are also of importance. Eudoxus of Cnidus, said to have first adduced the change in the altitude of stars accompanying a change of latitude as proof of the sphericity of the earth, wrote works now known only in the poems of Aratus, who flourished in the latter half of the third century B. C.[1] Geminus (circ. B. C. 50),[2] and Cleomedes,[3] whose work is famous for having preserved the method by which Eratosthenes measured the circumference of the earth, were authors of brief popular compilations of astronomical science. Of vast importance in the history of learning was the astronomical work of Ptolemy, *ἡ μεγάλη σύνταξις τῆς ἀστρονομίας*, which was so honored by the Arabs that it is best known to us as the *Almagest*, from *Tabric al Magisthri*, the title of the Arabic translation which was made in 827. It has been edited and translated by Halma (Paris, 1813, 1816).

Much is to be learned from the *Scholia* attached in early times to the works of Hesiod, Homer, Pindar, the *Argonautica* of Apollonius Rhodius (B. C. 276–193 ?), and to the works of Aristotle, Plato, etc. In some cases these are printed with the works commented upon; in other cases, the *Scholia* have been printed separately. The commentary of Proclus (A. D. 412–485) upon the *Timaeus* of Plato is of great importance in the Atlantis myth.[4]

Much interest attaches to the dialogue entitled *On the face appearing in the orb of the moon*, which appears among the *Moralia* of Plutarch. Really a contribution to the question of life after death, this work also throws light upon geographical and astronomical knowledge of its time.

Among the Romans we find much the same succession of sources. The poets, Virgil, Horace, Ovid, Tibullus, Lucretius, Lucan, Seneca, touch on geographical or astronomical points and reflect the opinion of their day.[5]

The first six books of the great encyclopaedia compiled by Pliny the elder (A. D. 23–79)[6] contain an account of the universe and the earth, which is of the greatest value, and was long exploited by compilers of later times, among the earliest and best of whom was Solinus.[7] Equally famous with Solinus was the author of a work of more independent character, Pomponius Mela, who lived in the first century A. D. His geography, commonly

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fully in Winsor's *Bibliography of Ptolemy's Geography* (Cambridge, Mass., 1884), and in the section on Ptolemy by Wilberforce Eames in Sabin's *Dictionary*, also printed separately.

[1] The *Phaenomena* of Aratus was a poem which had great vogue both in Greece and Rome. It was commented upon by Hipparchus and Achilles Tatius (both of which commentaries are preserved, and are found in the *Uranologion* of Petavius), and translated by Cicero.

[2] *Gemini elementa astronomiae*, also quoted by the first word of the Greek title, *Isagoge*. First edition, Altorph, 1590. The best edition is still that in the *Uranologion* of Dionysius Petavius (Paris, 1630). It is also found in the rare translation of Ptolemy by Halma (Paris, 1828).

[3] **Κύκλικη θεώρια** quoted as *Cleom. de sublimibus circulis*. The first edition was at Paris, 1539. 4to. It has been edited by Bake (Lugd. Bat., 1826), and Schmidt (Leips. 1832). Nothing is known of the life of Cleomedes. He wrote after the 1st cent. A. D., probably.

[4] It was first printed in the Plato of Basle, 1534. There is an English translation by Thomas Taylor, *The Commentaries of Proclus on the Timaeus of Plato*, in 2 vols. (London, 1820). Proclus was also the author of astronomical works which helped to keep Grecian learning alive in the early Middle Ages.

[5] The works of L. Annaeus Seneca were first printed in Naples, 1475, fol., but the *Questionum naturalium lib. vii.* were not included until the Venice ed. of 1490, which also contained the first edition of the *Suasoriae* and *Controversariae* of M. Ann. Seneca. The *Tragoediae* of L. Ann. Seneca were first printed about 1484 by A. Gallicus, probably at Ferrara.

[6] *Historiae naturalis libri xxxvii.* The first edition was the famous and rare folio of Joannes de Spira, Venice, 1469. I find record of ten other editions and three issues of Landino's Italian translation before 1492.

[7] *C. Julii Solini Collectanea rerum memorabilium sive polyhistor.* Solinus lived probably in the third century A. D. His book was a great favorite in the Middle Ages, both in manuscript and in print, and was known by various titles, as *Polyhistor*, *De situ orbis*, etc. The first edition appeared without place or date, at Rome, about 1473, and in the same year at Venice, and it was often reprinted with the annotations of the most famous geographers. The best edition is that by Mommsen (Berlin, 1864). See Vol. II. p. 180.

known as *De situ orbis* from the mediæval title, though the proper name is *De chorographia*, is a work of importance and merit. In the Middle Ages it had wonderful popularity.[1] Cicero, who contemplated writing a history of geography, touches upon the arrangement of the earth's surface several times in his works, as in the *Tusculan Disputations*, and notably in the sixth book of the *Republic*, in the episode known as the "Dream of Scipio." The importance of this piece is enhanced by the commentary upon it written by Macrobius in the fifth century A. D.[2] A peculiar interest attaches to the poems of Avienus, of the fourth century A. D., in that they give much information about the character attributed to the Atlantic Ocean.[3] The astronomical poems of Manilius[4] and Hyginus were favorites in early Middle Ages. The astrological character of the work of Manilius made it popular, but it conveyed also the true doctrine of the form of the earth. The curious work of Marcianus Capella gave a résumé of science in the first half of the fifth century A. D., and had a like popularity as a school-book and house-book which also helped maintain the truth.[5]

Such in the main are the ancient writers upon which we must chiefly rely in considering the present question. In the interpretation of these sources much has been done by the leading modern writers on the condition of science in ancient times; like Bunbury, Ukert, Forbiger, St. Martin, and Peschel on geography;[6] like Zeller on philosophy, not to name many others;[7] and like Lewis and Martin on astronomy;[8] but there is no occasion to go to much length in the enumeration of this class of books. The reader is referred to the examination of the literature of special points of the geographical studies of the ancients to the notes following this Essay.

Mediæval cosmology and geography await a thorough student; they are imbedded in the wastes of theological discussions of the Fathers, or hidden in manuscript cosmographies in libraries of Europe. It should be noted that confusion has arisen from the use of the word *rotundus* to express both the sphericity of the earth and the circularity of the known lands, and from the use of *terra*, or *orbis terrae*, to denote the inhabited lands, as well as the globe. It has been pointed out by Ruge (*Gesch. d. Zeitalters der Entdeckungen*, p. 97) that the later Middle Age adopted the circular form of the *oekoumene* in consequence of a peculiar theory as to the relation of the land and water masses of the earth, which were conceived as two intercepting spheres. The *oekoumene* might easily be spoken of as a round disk without implying that the whole earth was plane.[1] That the struggle of the Christian faith, at first for existence and then for the proper harvesting of the fruits of victory, induced its earlier defenders to wage war against the learning as well as the religion of the pagans; that Christians were inclined to think time taken from the contemplation of the true faith worse than wasted when given to investigations into natural phenomena, which might better be accepted for what they professed to be; and that they often found in Scripture a welcome support for the evidence of the senses, — cannot be denied. It was inevitable that St. Chrysostom, Lactantius, Orosius and Origines rejected or declined to teach the sphericity of the earth. The curious systems of Cosmas and Aethicus, marked by a return to the crudest conceptions of the universe, found some favor in Europe. But the truth was not forgotten. The astronomical poems of Aratus, Hyginus, and Manilius were still read. Solinus and other plunderers of Pliny were popular, and kept alive the ancient knowledge. The sphericity of the earth was not denied by St. Augustine; it was maintained by Martianus Capella, and assumed by Isidor of Seville. Bede[2] taught the whole system of ancient geography; and but little later, Virgilius, bishop of Saltzburg, was threatened with papal displeasure, not for teaching the sphericity of the earth, but for upholding the existence of antipodes.[3] The canons of Ptolemy were cited in the eleventh century by Hermann Contractus in his *De utilitatibus astrolabii*, and in the twelfth by Hugues de Saint Victor in his *Eruditio didascalica*. Strabo was not known before Pope Nicholas V., who ordered the first translation. Not many to-day can illustrate the truth more clearly than the author of *L'Image du Monde*, an anonymous poem of the thirteenth century. If two men, he says, were to start at the same time from a given point and go, the one east, the other west, —

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[1] First edition, Milan, 1471. 4to. The best is that by Parthey, Berlin, 1867. A history and bibliography of this work is given in Vol. II. p. 180.

[2] *Commentariorum in somnium Scipionis libri duo*. The first edition was at Venice, 1472. There has been an edition by Jahn (2 vols. Quedlinburg, 1848, 1852), and by Eyssenhardt (Leipzig, 1868), and a French translation by various hands, printed in 3 vols. at Paris, 1845-47.

[3] *Descriptio orbis terrae; ora maritima*. The first edition appeared at Venice in 1488, with the *Phaenomena* of Aratus. It is included in the *Geogr. Graec. min.* of Mueller. Muellenhof has treated of the latter poem at length in his *Deutsche Alterthumskunde*, i. 73-210.

[4] *Astronomicon libri v.* Manilius is an unknown personality, but wrote in the first half of the first century A. D. (First ed., Nuremberg, 1472 or 1473); Hyginus, *Poeticon Astronomicon*, 1st or 2d cent. A. D. (Ferrara, 1475).

[5] *De nuptiis philologiae et Mercurii*, first ed. Vicent., 1499.

[6] E. H. Bunbury, *Hist. of Anc. Geog. among the Greeks and Romans* (London, 1879), in two volumes, — a valuable, well-digested work, but scant in citations. Ukert, *Geog. der Griechen und Römer* (Weimar, 1816), very rich in citations, giving authorities for every statement, and useful as a summary.

Forbiger, *Handbuch der alten Geographie* (Hamburg, 1877), compiled on a peculiar method, which is often very sensible. He first analyzes and condenses the works of each writer, and then sums up the opinions on each country and phase of the subject.

Vivien de St. Martin, *Histoire de la Géographie* (Paris, 1873).

Peschel, *Geschichte der Erdkunde* (2d ed., by S. Ruge, München, 1877). Perhaps reference is not out of place also to P. F. J. Gosselin's *Géographie des Grecs analysée, ou les Systèmes d'Eratosthenes, de Strabon et de Ptolémée, comparés entre eux et avec nos connaissances modernes* (Paris, 1790); and his later *Recherches sur la Geographie systématique et positive des anciens* (1797-1813).

Cf. Hugo Berger, *Geschichte der wiss. Erdkunde der Griechen* (Leipzig, 1887).

[7] *Geschichte der Griechischen Philosophie* (Tübingen, 1856-62).

[8] Sir George Cornwall Lewis, *Historical Survey of the Astronomy of the Ancients* (London, 1862).

Theodore Henri Martin, whose numerous papers are condensed in the article on "Astronomie" in Daremberg and Saglio's *Dictionnaire de l'Antiquité*. Some of the more important distinct papers of Martin appeared in the *Mém. Acad. Inscrip. et Belles Lettres*.

Si que andui egaumont alassent
Il convendroit qu'il s'encontrassent
Dessus le leu dont il se mûrent.[4]

In general, the mathematical and astronomical treatises were earlier known to the West than the purely metaphysical works: this was the case in the eleventh and twelfth centuries; in the thirteenth the schoolmen were familiar with the whole body of Aristotle's works. Thus the influence of Aristotle on natural science was early important, either through Arabian commentators or paraphrasers, or through translations made from the Arabic, or directly from the Greek.[5]

Jourdain affirms that it was the influence of Aristotle and his interpreters that kept alive in the Middle Ages the doctrine that India and Spain were not far apart. He also maintains that the doctrine of the sphericity of the earth was familiar throughout the Middle Age, and, if anything, more of a favorite than the other view.

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[1] See Cellarius, *Notit. orb. antiq.* i. ch. 2, *de rotunditate terrae*. See also Günther, *Aeltere und neuere Hypothese ueber die chronische Versetzung des Erdschwerpunktes durch Wassermassen* (Halle, 1878).

[2] *De Natura Rerum.*

[3] See *ante*, p. 31. In the second century St. Clement spoke of the "Ocean impassible to man, and the worlds beyond it." *1st Epist. to Corinth.* ch. 20. (*Apostolic Fathers*, Edinb. 1870, p. 22.)

[4] Legrand d'Aussy, *Image du Monde. Notices et extraits de la Bibliothèque du Roi*, etc., v. (1798), p. 260. It is also said that the earth is round, so that a man could go all round it as an insect can walk all round the circumference of a pear. This notable poem has been lately studied by Fant, but is still unprinted. It was known to Abulfeda, that if two persons made the journey described, they would on meeting differ by two days in their calendar (Peschel, *Gesch. d. Erdkunde*, p. 132).

[5] A. Jourdain, *Recherches critique sur l'âge et l'origin des traductions latines d'Aristote, et sur des commentaires Grecs et Arabes employés par les docteurs scolastiques* (Paris, 1843). See also *De l'influence d'Aristote et de ses interprètes sur la découverte du nouveau-monde, par Ch. Jourdain* (Paris, 1861).

The field of the later ecclesiastical and scholastic writers, who kept up the contentions over the form of the earth and kindred subjects, is too large to be here minutely surveyed. Such of them as were well known to the geographical students of the centuries next preceding Columbus have been briefly indicated in another place;[1] and if not completely, yet with helpful outlining, the whole subject of the mediæval cosmology has been studied by not a few of the geographical and cartographical students of later days.[2] So far as these studies pertain to the theory of a Lost Atlantis and the fabulous islands of the Atlantic Ocean, they will be particularly illustrated in the notes which follow this Essay.

Wm. H. Tillinghast

NOTES.

A. The Form of the Earth. — It is not easy to demonstrate that the earliest Greeks believed the earth to be a flat disk, although that is the accepted and probably correct view of their belief. It is possible to examine but a small part of the earliest literature, and what we have is of uncertain date and dubious origin; its intent is religious or romantic, not scientific; its form is poetic. It is difficult to interpret it accurately, since the prevalent ideas of nature must be deduced from imagery, qualifying words and phrases, and seldom from direct description. The interpreter, doubtful as to the proportion in which he finds mingled fancy and honest faith, is in constant danger of overreaching himself by excess of ingenuity. In dealing with such a literature one is peculiarly liable to abuse the always dangerous argument by which want of knowledge is inferred from lack of mention. Other difficulties beset the use of later philosophic material, much of which is preserved only in extracts made by antagonists or by compilers, so that we are forced to confront a lack of

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[1] See Vol. II., ch. i., Critical Essay.

[2] Cf. a bibliographical note in St. Martin's *Histoire de la Géographie* (1873), p. 296. The well-known *Examen Critique* of Humboldt, the *Recherches sur la géographie* of Walckenaer, the *Géographie du moyen-âge* of Lelewel, with a few lesser monographic papers like Fréville's "Mémoire sur la Cosmographie du moyen-âge," in the *Revue des Soc. Savantes*, 1859, vol. ii., and Gaffarel's "Les relations entre l'ancient monde et l'Amérique, étaient-elles possible au moyen-âge," in the *Bull. de la Soc. Normande de Géog.*, 1881, vol. iii. 209, will answer most purposes of the general reader; but certain special phases will best be followed in Letronne's *Des opinions cosmographiques des Pères de l'Eglise, rapprocher des doctrines philosophiques de la Grece*, in the *Revue des Deux Mondes*, Mars, 1834, p. 601, etc. The Vicomte Santarem's *Essai sur l'histoire de la cosmographie et de la cartographie pendant le moyen-âge, et sur les progrès de la géographie après les grandes découvertes du xv^e siècle* (Paris, 1849–52), in 3 vols., was an introduction to the great *Atlas* of mediæval maps issued by Santarem, and had for its object the vindication of the Portuguese to be considered the first explorers of the African coast. He is more interested in the burning zone doctrine than in the shape of the earth. H. Wuttke's *Ueber Erdkunde und Kultur des Mittelalters* (Leipzig, 1853) is an extract from the *Serapeum*. G. Marinelli's *Die Erdkunde bei den Kirchenvätern* (Leipzig, 1884, pp. 87) is very full on Cosmas, with drawings from the MS. not elsewhere found; Siegmund Günther's *Die Lehre von der Erdrundung u. Erdbewegung im Mittelalter bei den Occidentalen* (Halle, 1877), pp. 53, and his *Die Lehre von der Erdrundung u. Erdbewegung bei den Arabern und Hebräern* (Halle, 1877), pp. 127, give numerous bibliographical references with exactness. Specially interesting is Charles Jourdain's *De l'influence d'Aristote et de ses interprètes aux la découverte du nouveau monde* (Paris, 1861), where we read (p. 30): "La pensée dominante de Colomb était l'hypothèse de la proximité de l'Espagne et de l'Asie, et . . . cette hypothèse lui venait d'Aristote et des scolastiques;" and again (p. 24): "Ce n'est pas à Ptolémée . . . que le moyen âge a emprunté l'hypothèse d'une communication entre l'Europe et l'Asie par l'océan Atlantique. . . . Cette conséquence, qui n'avait par éschappé à Eratosthène, n'est pas énoncée par Ptolémée tandis qu'elle retrouve de la manière la plus expresse chez Aristote."

context and possible misunderstanding or misquotation. The frequent use of the word στρογγύλος, which has the same ambiguity as our word "round" in common parlance, often leads to uncertainty. A more fruitful cause of trouble is inherent in the Greek manner of thinking of the world. It is often difficult to know whether a writer means the planet, or whether he means the agglomeration of known lands which later writers called ἡ οἰκουμένη. It is not impossible that when writers refer to the earth as encircled by the river Oceanus, they mean, not the globe, but the known lands, the eastern continent, as we say, what the Romans sometimes called *orbis terrae* or *orbis terrarum*, a term which may mean the "circle of the lands," not the "orb of the earth." At a later time it was a well-known belief that the earth-globe and water-globe were excentrics, so that a segment of the former projected beyond the surface of the latter in one part, and constituted the known world.[1]

I cannot attach much importance to the line of argument with which modern writers since Voss have tried to prove that the Homeric poems represent the earth flat. That Poseidon, from the mountains of the Solymi, sees Odesseus on the sea to the west of Greece (*Od.* v. 282); that Helios could see his cattle in Thrinakia both as he went toward the heavens and as he turned toward the earth again (*Od.* xii. 380); that at sunset "all the ways are darkened;" that the sun and the stars set in and rose from the ocean, — these and similar proofs seem to me to have as little weight as attaches to the expressions "ends of the earth," or to the flowing of Oceanus around the earth. There are, however, other and better reasons for assuming that the earth in earliest thought was flat. Such is the most natural assumption from the evidence of sight, and there is certainly nothing in the older writings inconsistent with such an idea. We know, moreover, that in the time of Socrates it was yet a matter of debate as to whether the earth was flat or spherical, as it was in the time of Plutarch.[2] We are distinctly told by Aristotle that various forms were attributed to earth by early philosophers, and the implication is that the spherical theory, whose truth he proceeds to demonstrate, was a new thought.[3] It is very unlikely, except to those who sincerely accept the theory of a primitive race of unequalled wisdom, that the sphericity of the earth, having been known to Homer, should have been cast aside by the Ionic philosophers and the Epicureans, and forgotten by educated people five or six centuries later, as it must have been before the midnight voyage of Helios in his golden cup, and before similar attempts to account for the return of the sun could have become current. Ignorance of the true shape of the earth is also indicated by the common view that the sun appeared much larger at rising to the people of India than to the Grecians, and at setting presented the same phenomenon in Spain.[4] As we have seen, the description of Tartarus in the *Theogony* of Hesiod, which Fick thinks an interpolation of much later date, likens the earth to a lid.

The question has always been an open one. Crates of Mallos, Strabo, and other Homer-worshippers of antiquity, could not deny to the poet any knowledge current in their day, but their reasons for assuming that he knew the earth to be a globe are not strong. In recent years President Warren has maintained that Homer's earth was a sphere with Oceanus flowing around the equator, that the pillars of Atlas meant the axis of the earth, and that Ogygia was at the north pole.[5] Homer, however, thought that Oceanus flowed around the known lands, not that it merely grazed their southern border: it is met with in the east where the sun rises, in the west (*Od.* iv. 567), and in the north (*Od.* v. 275).

That "Homer and all the ancient poets conceived the earth to be a plane" was distinctly asserted by Geminus in the first century B. C.,[6] and has been in general steadfastly maintained by moderns like Voss,[7] Völcker,[8] Buchholtz,[9] Gladstone,[10] Martin,[11] Schaefer,[12] and Gruppe.[13] It is therefore intrinsically probable, commonly accepted, and not contradicted by what is known of the literature of the time itself.[14]

B. Homer's Geography. — There is an extensive literature on the geographic attainments of Homer, but it is for the most part rather sad reading. The later Greeks had a local identification for every place mentioned in the *Odyssey;* but conservative scholars at present are chary of such, while agreed in confining the scene of the wanderings to the western Mediterranean. Gladstone, in *Homer and the Homeric Age*, has argued with ingenuity for the transfer of the scene from the West to the East, and has constructed on this basis one of the most extraordinary maps of "the ancient world" known. K. E. von Baer (*Wo ist der Schauplatz d. Fahrten d. Odysseus zu finden? 1875*), agreeing with Gladstone, "identifies" the Lastrygonian harbor with Balaklava, and discovers the very poplar grove of Persephone. It is a favorite scheme with others to place the wanderings outside the columns of Hercules, among the Atlantic isles,[1] and to include a circumnavigation of Africa. The better opinion seems to me that which leaves the wanderings in the western Mediterranean, which was considered to extend much farther north than it actually does. The maps which represent the voyage within the actual coast lines of the sea, and indicate the vessel passing through the Straits to the ocean, are misleading. There is not enough given in the poem to resolve the problem. The courses are vague, the distances uncertain or conventional, — often neither are given; and the matter is complicated by the introduction of a *floating* island, and the mysterious voyages from the land of the Phaeacians. It is a pleasant device adopted by Buchholtz and others to assume that where the course is not given, the wind last mentioned must be considered to still hold, and surely no one will grudge the commentators this amelioration of their lot.

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[1] See also *ante*, p. 37.

[2] Plato, *Phaedo*, 108; Plutarch, *De facie*.

[3] Aristotle, *De caelo*, ii. 13.

[4] Ctesias, *On India*, ch. v. (ed. Didot, p. 80), says the rising sun appears ten times larger in India than in Greece. Strabo, *Geogr.* iii. 1, § 5, quotes Posidonius as denying a similar story of the setting sun as seen from Gades.

Whether Herodotus had a similar idea when he wrote that in India the mornings were torrid, the noons temperate and the evenings cold (Herod. iii. 104), is uncertain. Also see Dionysius Periegetes, *Periplus*, 1109–1111, in *Geographi Graeci minores. Ed. C. Mueller* (Paris, Didot, 1861), ii. 172). Rawlinson sees in it only a statement of climatic fact.

[5] *The True Key to Ancient Cosmogonies*, in the *Year Book of Boston University*, 1882, and separately, Boston, 1882; and in his *Paradise Found*, 4th ed. (Boston, 1885).

[6] Geminus, *Isagoge*, c. 13.

[7] "Ueber die Gestalt der Erde nach den Begriffen der Alten," in *Kritische Blätter*, ii. (1790) 130.

[8] *Ueber Homerische Geographie und Weltkunde* (Hanover, 1830).

[9] *Homerische Realien, I. 1. Homerische Cosmographie und Geographie* (Leipzig, 1871).

[10] *Homer and the Homeric Age* (London, 1858), ii. 334. The question of Aeaea, "where are the dancing places of the dawn" (*Od.* xii. 5), almost induces Gladstone to believe that Homer thought the earth cylindrical, but it may be doubted if the expression means more than an outburst of joy at returning from the darkness beyond ocean to the realm of light.

[11] "Mémoire sur la cosmographie Grecque à l'époque d'Homere et d'Hesiode," in *Mém. de l'Acad. des Inscr. et des Belles Lettres*, xxviii. (1874) 1, 211–235.

[12] *Entwicklung der Ansichten des Alterthums ueber Gestalt und Grösse der Erde.* Leipzig, 1868. (Gymn. z. Insterburg.)

[13] *Die Kosmischen Systeme der Griechen* (Berlin, 1851).

[14] See also Keppel, *Die Ansichten der alten Griechen und Römer von der Gestalt, Grösse, und Weltstellung der Erde.* (Schweinfurt, 1884.)

C. SUPPOSED REFERENCES TO AMERICA. — It is well known that Columbus's hopes were in part based on passages in classical authors.[2] Glareanus, quoting Virgil in 1527, after Columbus's discovery had made the question of the ancient knowledge prominent, has been considered the earliest to open the discussion;[3] and after this we find it a common topic in the early general writers on America, like Las Casas (*Historia General*), Ramusio (introd. vol. iii.), and Acosta (book i. ch. 11, etc.)

In the seventeenth and eighteenth centuries it was not an uncommon subject of academic and learned discussion.[4] It was a part of the survey made by many of the writers who discussed the origin of the American tribes, like Garcia,[5] Lafitau,[6] Samuel Mather,[7] Robertson,[8] not to name others.

It was not till Humboldt compassed the subject in his *Examen Critique de l'histoire de la géographie du nouveau continent* (Paris, 1836), that the field was fully scanned with a critical spirit, acceptable to the modern mind. He gives two of the five volumes which comprise the work to this part of his subject, and very little has been added by later research, while his conclusions still remain, on the whole, those of the most careful of succeeding writers. The French original is not equipped with guides to its contents, such as a student needs; but this is partly supplied by the index in the German translation.[9] The impediments which the student encounters in the *Examen Critique* are a good deal removed in a book which is on the whole the easiest guide to the sources of the subject, — Paul Gaffarel's *Etude sur les rapports de l'Amérique et de l'ancien continent avant Christophe Colomb* (Paris, 1869).[10]

The literature of the supposed old-world communication with America shows other phases of this question of ancient knowledge, and may be divided, apart from the Greek embraced in the previous survey, into those of the Egyptians, Phœnicians, Tyrians, Carthaginians, and Romans.

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[1] For example, K. Jarz, "Wo sind die Homerischen Inseln Trinakie, Scherie, etc. zu suchen?" in *Zeitschr. für wissensch. Geogr.* ii. 10–18, 21.

[2] See Vol. II. p. 26. His son Ferdinand enlarges upon this. The passage in Seneca's *Medea* was a favorite. This is often considered rather as a lucky prophecy. Leibnitz, *Opera Philologica* (Geneva, 1708), vi. 317. Charles Sumner's "Prophetic Voices concerning America," in *Atlantic Monthly*, Sept. 1867 (also separately, Boston, 1874). *Hist. Mag.* xiii. 176; xv. 140.

[3] Vol. II. 25. Harrisse, *Bib. Amer. Vet.* i. 262.

[4] Perizonius, in his note to the story of Silenus and Midas, quoted from Theopompus by Ælian in his *Varia Historiæ* (Rome, 1545; in Latin, Basle, 1548; in English, 1576), quotes the chief references in ancient writers. Cf. Ælian, ed. by Perizonius, Lugd. Bat. 1701, p. 217. Among the writers of the previous century quoted by this editor are Rupertus, *Dissertationes mixtæ ad Val. Max.* (Nuremberg, 1663). Math. Berniggerus, *Ex Taciti Germaniâ et Agricolâ questiones* (Argent. 1640). Eras. Schmidt, *Dissert. de America*, which is annexed to Schmidt's ed. of Pindar (Witelsbergæ, 1616), where it is spoken of as "Discursus de insula Atlantica ultra columnas Herculis quæ America hodie dicitur." Cluverius, *Introduction in univers. geogr.*, vi. 21, § 2, supports this view, 1st ed., 1624. In the ed. 1729 is a note by Reiskius on the same side, with references (p. 667).

Of the same century is J. D. Victor's *Disputatio de America* (Jenæ, 1670).

In Brunn's *Bibliotheca Danica* are a number of titles of dissertations bearing on the subject; they are mostly old.

[5] Even the voyage of Kolaos, mentioned in Herodotus (iv. 152), is supposed by Garcia a voyage to America.

[6] *Mœurs des Sauvages* (Paris, 1724).

[7] *Attempt to show that America must have been known to the Ancients* (Boston, 1773).

[8] *History of America*, 1775.

[9] See Vol. II. p. 68. Humboldt (i. 191) adopts the view of Ortelius that the grand continent mentioned by Plutarch is America and not Atlantis. Cf. Brasseur's *Lettres à M. le Duc de Valmy*, p. 57.

[10] Gaffarel has since elaborated this part of the book in some papers, "Les Grecs et les Romains ont-ils connu l'Amérique?" in the *Revue de Géographie* (Oct. 1881, *et seq.*), ix. 241, 420; x. 21, under the heads of traditions, theories, and voyages.

There are references in Bancroft's *Native Races*, v. ch. 1; and in his *Cent. America*, vi. 70, etc.; in Short, *No. Amer. of Antiq.*, 146, 466, 474; in DeCosta's *Precolumbian Discovery*. Brasseur touches the subject in his introduction to his *Landa's Relation;* Charles Jourdain, in his *De l'influence d'Aristote et de ses interprètes sur la découverte du nouveau monde* (Paris, 1861), taken from the *Journal de l'Instruction Publique.* A recent book, W. S. Blackett's *Researches*, etc. (Lond. 1883), may be avoided.

The Egyptian theory has been mainly worked out in the present century. Paul Felix Cabrera's *Teatro critico Americano*, printed with Rio's *Palenqué* (Lond., 1822), formulates the proofs. An essay by A. Lenoir, comparing the Central American monuments with those of Egypt, is appended to Dupaix's *Antiquités Méxicaines* (1805). Delafield's *Inquiry into the Origin of the Antiquities of America* (Cincinnati, 1839), traces it to the Cushites of Egypt, and cites Garcia y Cubas, *Ensayo de an Estudio Comparativo entre las Pirámides Egipcias y Méxicanas.* Brasseur de Bourbourg discussed the question, *S'il existe des sources de l'histoire primitive du Méxique dans les monuments égyptiens de l'histoire primitive de l'ancien monde dans les monuments américains?* in his ed. of Landa's *Relations des Choses de Yucatan* (Paris, 1864). Buckle (*Hist. of Civilization*, i. ch. 2) believes the Mexican civilization to have been strictly analogous to that of India and Egypt. Tylor (*Early Hist. of Mankind*, 98) compares the Egyptian hieroglyphics with those of the Aztecs. John T. C. Heaviside, *Amer. Antiquities, or the New World the Old, and the Old World the New* (London, 1868), maintains the reverse theory of the Egyptians being migrated Americans. F. de Varnhagen works out his belief in *L'origine touranienne des américains tupis-caribes et des anciens égyptiens montrée principalement par la philologie comparée; et notice d'une émigration en Amérique effectuée à travers l'Atlantique plusieurs siècles avant notre ère* (Vienne 1876).[1]

Aristotle's mention of an island discovered by the Phœnicians was thought by Gomara and Oviedo to refer to America. The elder leading writers on the origin of the Indians, like Garcia, Horn, De Laet, and at a later day Lafitau, discuss the Phœnician theory; as does Voss in his annotations on Pomponius Mela (1658), and Count de Gebelin in his *Monde primitif* (Paris, 1781). In the present century the question has been touched by Cabrera in Rio's *Palenqué* (1822). R. A. Wilson, in his *New Conquest of Mexico*, assigns (ch. v.) the ruins of Middle America to the Phœnicians. Morlot, in the *Actes de la Société Jurassienne d'Emulation* (1863), printed his "La découverte de l'Amérique par les Phènicièns." Gaffarel sums up the evidences in a paper in the *Compte Rendu, Cong. des Amér.* (Nancy), i. 93.[2]

The Tyrian theory has been mainly sustained by a foolish book, by a foolish man, *An Original History of Anc. America* (London, 1843), by Geo. Jones, later known as the Count Johannes (cf. Bancroft's *Native Races*, v. 73).

The Carthaginian discovery rests mainly on the statements of Diodorus Siculus.[3]

Baron Zach in his *Correspondenz* undertakes to say that Roman voyages to America were common in the days of Seneca, and a good deal of wild speculation has been indulged in.[4]

D. ATLANTIS. — The story of Atlantis rests solely upon the authority of Plato, who sketched it in the *Timaeus*, and began an elaborated version in the *Critias* (if that fragment be by him), which old writers often cite as the *Atlanticus*. This is frequently forgotten by those who try to establish the truth of the story, who often write as if all statements in print were equally available as "authorities," and quote as corroborations of the tale all mentions of it made by classical writers, regardless of the fact that all are later than Plato, and can no more than Ignatius Donnelly corroborate him. In fact, the ancients knew no better than we what to make of the story, and diverse opinions prevailed then as now. Many of these opinions are collected by Proclus in the first book of his commentary on the *Timaeus*,[5] and all shades of opinion are represented from those who, like Crantor, accepted the story as simply historical, to those who regarded it as a mere fable. Still others, with Proclus himself, accepted it as a record of actual events, while accounting for its introduction in Plato by a variety of subtile metaphysical interpretations. Proclus reports that Crantor, the first commentator upon Plato (*circa* B. C. 300), asserted that the Egyptian priests said that the story was written on pillars which were still preserved,[6] and he likewise quotes from the *Ethiopic History* of Marcellus, a writer of whom nothing else is known, a statement that according to certain historians there were seven islands in the external sea sacred to Proserpine; and also three others of great size, one sacred to Pluto, one to Ammon, and another, the middle one, a thousand stadia in size, sacred to Neptune. The inhabitants of it preserved the remembrance, from their ancestors, of the Atlantic island which existed there, and was truly prodigiously great, which for many periods had dominion over all the islands in the Atlantic sea, and was itself sacred to Neptune.[1] Testimony like this is of little value in such a case. What comes to us at third hand is more apt to need support than give it; yet these two passages are the strongest evidence of knowledge of Atlantis outside of Plato that is preserved. We do indeed find mention of it elsewhere and earlier. Thus Strabo[2] says that Posidonius (B. C. 135–51) suggested that, as the land was known to have changed in elevation, Atlantis might not be a fiction, but that such an island-continent might actually have existed and disappeared. Pliny[3] also mentions Atlantis in treating of changes in the earth's surface, though he qualifies his quotation with "si Platoni credimus."[4] A mention of the story in a similar connection is made by Ammianus Marcellinus.[5]

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[1] Of lesser importance are these: Bancroft's *Native Races*, iv. 364, v. 55; Short, 418; Stephens's *Cent. Amer.*, ii. 438–442; M'Culloh's *Researches*, 171; Weise, *Discoveries of America*, p. 2; Campbell in *Compte Rendu, Congrès des Amér.* 1875, i. W. L. Stone asks if the mound-builders were Egyptians (*Mag. Amer. History*, ii. 533).

[2] Of less importance are: Bancroft, *Nat. Races*, v. 63–77, with references; Short, 145; Baldwin's *Anc. America*, 162, 171; Warden's *Recherches*, etc. The more general discussion of Humboldt, Brasseur (*Nat. Civ.*), Gaffarel (*Rapport*), De Costa, etc., of course helps the investigator to clues.

The subject is mixed up with some absurdity and deceit. The Dighton Rock has passed for Phœnician (Stiles' *Sermon*, 1783; Yates and Moulton's *New York*). At one time a Phœnician inscription in Brazil was invented (*Am. Geog. Soc. Bull.* 1886, p. 364; St. John V. Day's *Prehistoric Use of Iron*, Lond. 1877, p. 62). The notorious Cardiff giant, conveniently found in New York state, was presented to a credulous public as Phœnician (*Am. Antiq. Soc. Proc.*, Ap. 1875). The history of this hoax is given by W. A. McKinney in the *New Englander*, 1875, p. 759.

[3] Cf. Johr. Langius, *Medicinalium Epistolarum Miscellanea* (Basle, 1554–60), with a chapter, "De novis Americi orbis insulis, antea ab Hannone Carthaginein repertis;" Gebelin's *Monde Primitif*; Bancroft's *Native Races*, iii. 313, v. 77; Short, 145, 209.

[4] A specimen is in M. V. Moore's paper in the *Mag. of Amer. Hist.* (1884). xii. 113, 354. There are various fugitive references to Roman coins found often many feet under ground, in different parts of America. See for such, Ortelius, *Theatrum orbis terrarum*; Haywood's *Tennessee* (1820); *Hist. Mag.*, v. 314; *Mag. Amer. Hist.*, xiii. 457; Marcel de Serre, *Cosmogonie de Moise*, p. 32; and for pretended Roman inscriptions, Brasseur de Bourbourg, *Nat. Civ. Méx.*, preface; *Journal de l'Instruction Publique*, Juin, 1853; Humboldt, *Exam. Crit.*, i. 166; Gaffarel in *Rev. de Géog.*, ix. 427.

[5] *Procli commentarius in Platonis Timaeum. Rec. C. E. C. Schneider.* (*Vratislaviae*, 1847.) *The Commentaries of Proclus on the Timaeus of Plato. Translated by Thomas Taylor*, 2 vols. 4°. (London, 1820.) Proclus lived A. D. 412–485. The passages of importance are found in the translation, vol. i. pp. 64, 70, 144, 148.

[6] Taylor, i. 64.

In the Scholia to Plato's *Republic* it is said that at the great Panathenaea there was carried in procession a *peplum* ornamented with representations of the contest between the giants and the gods, while on the *peplum* carried in the little Panathenaea could be seen the war of the Athenians against the Atlantides. Even Humboldt accepted this as an independent testimony in favor of the antiquity of the story; but Martin has shown that, apart from the total inconsistency of the report with the expressions of Plato, who places the narration of this forgotten deed of his countrymen at the celebration of the festival of the little Panathenaea, the scholiast has only misread Proclus, who states that the *peplum* depicted the repulse of the barbarians, *i. e.* Persians, by the Greeks.[6] To these passages it is customary to add references to the Meropian continent of Theopompus,[7] the Saturnian of Plutarch, the islands of Aristotle, Diodorus and Pausanias, — which is very much as if one should refer to the *New Atlantis* of Bacon as evidence for the existence of More's *Utopia*.[8] Plutarch in his life of Solon attributes Solon's having given up the idea of an epic upon Atlantis to his advanced age rather than to want of leisure; but there is nothing to show that he had any evidence beyond Plato that Solon ever thought of such a poem, and Plato does not say that Solon began the poem, though Plutarch appears to have so understood him.[9] Thus it seems more probable that all the references to Atlantis by ancient writers are derived from the story in Plato than that they are independent and corroborative statements.

With the decline of the Platonic school at Alexandria even the name of Atlantis readily vanished from literature. It is mentioned by Tertullian,[10] and found a place in the strange system of Cosmas Indico-pleustes,[11] but throughout the Middle Ages little or nothing was known of it. That it was not quite forgotten appears from its mention in the *Image du Monde*, a poem of the thirteenth century, still in MS., where it is assigned a location in the *Mer Betée* (= coagulée).[12] Plato was printed in Latin in 1483, 1484, 1491, and in Greek in 1513, and in 1534 with the commentary of Proclus on the Timaeus.[13] The *Timaeus* was printed separately five times in the sixteenth century, and also in a French and an Italian translation.[14]

The discovery of America doubtless added to the interest with which the story was perused, and the old controversy flamed up with new ardor. It was generally assumed that the account given by Plato was not his invention. Opinions were, however, divided as to whether he had given a correct account. Of those who believed that he had erred as to the locality or as to the destruction of the island, some thought that America was the true Atlantis, while others, with whose ideas we have no concern here, placed Atlantis in Africa, Asia, or Europe, as prejudice led them. Another class of scholars, sensible of the necessity of adhering to the text of the only extant account, accepted the whole narrative, and endeavored to find in the geography of the

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[1] *Procl. in Tim.* (Schneider), p. 126; Taylor, i. 148. Also in *Fragmenta Historicorum Graecorum*, ed. Mueller. (Paris, 1852), vol. iv. p. 443.

[2] *Geogr.* ii. § 3, § 6 (p. 103).

[3] *Hist. Nat.*, ii. 92.

[4] The Atlantis mentioned by Pliny in *Hist. Nat.*, vi. 36, is apparently entirely distinct from the Atlantis of Plato.

[5] Amm. Marc. xvii. 7, § 13. Fiunt autem terrarum motus modis quattuor, aut enim brasmatiae sunt, . . . aut climatiae . . . aut chasmatiae, qui grandiori motu patefactis subito voratrinis terrarum partes absorbent, ut in Atlantico mare Europaeo orbe spatiosor insula, etc. (Ed. Eyssenhardt, Berlin, 1871, p. 106).

[6] Martin, *Etudes sur le Timée* (1841), i. 305, 306. The passage in question is in *Schol. ad Rempubl.*, p. 327, Plato, ed. Bekker, vol. ix. p. 67.

[7] Cited in Aelian's *Varia Historia*, iii. ch. 18. For the other references see above, pp. 23, 25, 26.

[8] Ammianus Marcellinus (xv. 9) quotes from Timagenes (who wrote in the first century a history of Gaul, now lost) a statement that some of the Gauls had originally immigrated from very distant islands and from lands beyond the Rhine (*ab insulis extimis* confluxisse et tractibus transrhenanis) whence they were driven by wars and the incursions of the sea (Timag. in Mueller, *Frag. hist. of Graec.*, iii. 323). It would seem incredible that this should be dragged into the Atlantis controversy, but such has been the case.

[9] Plutarch, *Solon*, at end. R. Prinz, *De Solonis Plutarchi fontibus* (Bonnæ, 1857).

[10] *De Pallio*, 2, *Apol.*, p. 32. Also by Arnobius, *Adversus gentes*, i. 5.

[11] Ed. Montfaucon, i. 114–125, ii. 131, 136–138, iv. 186–192, xii. 340.

[12] Gaffarel in *Revue de Géographie*, vi.

[13] *Platonis omnia opere cum comm. Proclii in Timaeum*, etc. (Basil. Valderus, 1534).

[14] *Ex Platoni Timaeo particula, Ciceronis libro de universitate respondens. . . . op. Jo. Perizonii* (Paris, Tiletanus, 1540; Basil. s. a.; Paris, Morell, 1551). *Interpret. Cicerone et Chalcidio*, etc. (Paris, 1579). *Le Timée de Platon, translaté du grec en français, par L. le Roy*, etc. (Paris, 1551, 1581). *Il dialogo di Platone, intitolato il Timaeo trad. da Sb. Erizzo, nuov. mandato en luce d. Gir Ruscellii* (Venet. 1558).

Atlantic, or as indicated by the resemblances between the flora, fauna, and civilization of America and of the old world, additional reasons for believing that such an island had once existed, and had disappeared after serving as a bridge by which communication between the continents was for a time carried on. The discussion was prolonged over centuries, and is not yet concluded. The wilder theories have been eliminated by time, and the contest may now be said to be between those who accept Plato's tale as true and those who regard it as an invention. The latter view is at present in favor with the most conservative and careful scholars, but the other will always find advocates. That Atlantis was America was maintained by Gomara, Guillaume de Postel, Horn, and others incidentally, and by Birchrod in a special treatise,[1] which had some influence even upon the geographer Cellarius. In 1669 the Sansons published a map showing America divided among the descendants of Neptune as Atlantis was divided, and even as late as 1762 Vaugondy reproduced it.[2] In his edition of Plato, Stallbaum expressed his belief that the Egyptians might have had some knowledge of America.[3] Cluverius thought the story was due to a knowledge of America.[4]

Very lately Hyde Clark has found in the Atlantis fable evidence of a knowledge of America: he does not believe in the connecting island Atlantis, but he holds that Plato misinterpreted some account of America which had reached him.[5] Except for completeness it is scarcely worth mentioning that Blackett, whose work can really be characterized by no other word than absurd, sees America in Atlantis.[6]

Here should be mentioned a work by Berlioux, which puts Euhemerus to the blush in the manner in which history with much detail is extorted from mythology.[7] He holds that Atlantis was the northwestern coast of Africa; that under Ouranos and Atlas, astronomers and kings, it was the seat of a great empire which had conquered portions of America and kept a lively commercial intercourse with that country.

Ortelius in several places speaks of the belief that America was the old Atlantis, and also attributes that belief to Mercator.[8]

That Atlantis might really have existed[9] and disappeared, leaving the Atlantic islands as remnants, was too evident to escape notice. Ortelius suggested that the island of Gades might be a fragment of Atlantis,[10] and the doctrine was early a favorite. Kircher, in his very curious work on the subterranean world, devotes considerable space to Atlantis, rejecting its connection with America, while he maintains its former existence, and holds that the Azores, Canaries, and other Atlantic islands were formerly parts thereof, and that they showed traces of volcanic fires in his day.[11]

Las Casas in his history of the Indies devoted an entire chapter to Atlantis, quoting the arguments of Proclus, in his commentary on Plato, in favor of the story, though he is himself more doubtful. He also cites confirmative passages from Philo and St. Anselm, etc. He considers the question of the Atlantic isles, and cites authorities for great and sudden changes in the earth's surface.[12]

The same view was taken by Becman,[13] and Fortia D'Urban. Turnefort included America in the list of remnants; and De la Borde followed Sanson in extending Atlantis to the farthest Pacific islands.[14] Bory de St. Vincent,[15] again, limited Atlantis to the Atlantic, and gave on a map his ideas of its contour.

D'Avezac maintains this theory in his *Iles africaines de l'Océan Atlantique*,[16] p. 5–8. Carli devoted a large part of the second volume of his *Lettere Americane* to Atlantis, controverting Baily, who placed Atlantis in Spitzbergen. Carli goes at considerable length into the topographical and geological arguments in favor of its existence.[1] The early naturalists, when the doctrine of great and sudden changes in the earth's surface was in favor, were inclined to look with acquiescence on this belief. Even Lyell confessed a temptation to accept the theory of an Atlantis island in the northern Atlantic, though he could not see in the Atlantic islands trace of a mid-Atlantic bridge.[2] About the middle of this century scholars in several departments of learning, accepting the evidences of resemblances between the product of the old and new world, were induced to turn gladly to such a connection as would have been offered by Atlantis; and the results obtained at about the same time by studies in the pre-Columbian traditions and civilization of Mexico were brought forward as supporting the same theory. That the Antilles were remnants of Atlantis; that the Toltecs were descendants from the panic-stricken fugitives of the great catastrophe, whose terrors were recorded in their traditions, as well as in those of the Egyptians, was ardently urged by Brasseur de Bourbourg.[3]

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[1] *Birchrodii Schediasma de orbe novo non novo* (Altdorf, 1683).

[2] The representation of Sanson is reproduced on p. 18. The full title of these curious maps is given by Martin, *Etudes sur le Timée*, i. 270, *notes*.

[3] *Plato, ed. Stallbaum* (Gothae, 1838), vii. p. 99, note E. See also his *Prolegomena de Critia*, in the same volume, for further discussion and references.

[4] Cluverius, *Introduct.*, ed. 1729, p. 667.

[5] *Examination of the legend of Atlantis in reference to proto-historic communications with America*, in the *Trans. Royal Hist. Soc.* (Lond., 1885), iii. p. 1–46.

[6] W. S. Blackett, *Researches into the lost histories of America; or, the Zodiac shown to be an old terrestrial map in which the Atlantic isle is delineated*, etc. (London, 1883), p. 31, 32. The work is not too severely judged by W. F. Poole, in the *Dial* (Chicago), Sept. 84, *note*. The author's reasons for believing that Atlantis could not have sunk are interesting in a way. The *Fourth Rept. Bur. of Ethnology* (p. 251) calls it "a curiosity of literature."

[7] E. F. Berlioux, *Les Atlantes: histoire de l'Atlantis, et de l'Atlas primitif* (Paris, 1883). It originally made part of the first *Annuaire* of the Faculté des lettres de Lyon (Paris, 1883).

[8] *Thesaurus Geogr.*, 1587, under *Atlantis*. See also under *Gades* and *Gadirus*. On folio 2 of his *Theatrum orbis terrarum* he rejects the notion that the ancients knew America, but in the index, under *Atlantis*, he says *forte America*.

[9] Bartolomé de las Casas, *Historia de las Indias. Ed. De la Fuensanto de Valle and J. S. Rayon* (Madrid, 1875), i. cap. viii. pp. 73–79.

[10] Taylor, in the introduction to the Timaeus, in his translation of Plato, regards as almost impious the doubts as to the truth of the narrative. *The Works of Plato*, vol. i. London, 1804.

[11] *Thes. Geogr.*, s. v. *Gadirus*.

[12] *Athanasii Kircherii Mundus subterraneus in xii. libros digestus* (Amsterd., 1678), pp. 80–83. He gives a cut illustrative of his views on p. 82.

[13] *Historia orbis terrarum geographica et civilis*, cap. 5, § 2, hist. insul. I. C. Becmann, 2d ed. (Francfort on Oder, 1680). Title from British Museum, as I have been unable to see the work. The *Allg. Deutsche Biographie* says the first edition appeared in 1680. It was a book of considerable note in its day.

[14] De la Borde, *Histoire abregée de la mer du Sud* (Paris, 1791).

[15] J. B. G. M. Bory de St. Vincent, *Essais sur les isles Fortunées et l'antique Atlantide* (Paris, an xi. or 1803), ch. 7. Si les Canaries et les autres isles de l'ocean Atlantique offrent les débris d'un continent. pp: 427, etc. His map is given *ante*, p. 19.

[16] This is the second part of his *Iles de l'Afrique* (Paris, 1848), belonging to the series *L'Univers. Histoire et description de tous les peuples*, etc. Cf. also his *Les îles fantastiques* (Paris, 1845).

In 1859 Retzius announced that he found a close resemblance between the skulls of the Guanches of the Canaries and the Guaranas of Brazil, and recalled the Atlantis story to explain it.[4] In 1846 Forbes declared his belief in the former existence of a bridge of islands in the North Atlantic, and in 1856 Heer attempted to show the necessity of a similar connection from the testimony of palæontological botany.

In 1860, Unger deliberately advocated the Atlantis hypothesis to explain the likeness between the fossil flora of Europe and the living flora of America, enumerating over fifty similar species; and Kuntze found in the case of the tropical seedless banana, occurring at once in America before 1492 and in Africa, a strong evidence of the truth of the theory.[5]

A condensed review of the scientific side of the question is given by A. Boué in his article *Ueber die Rolle der Veränderungen des unorganischen Festen im grossen Massstabe in der Natur.*[6]

The deep-sea soundings taken in the Atlantic under the auspices of the governments of the United States, England, and Germany resulted in discoveries which gave a new impetus to the Atlantis theory. It was shown that, starting from the Arctic plateau, a ridge runs down the middle of the Atlantic, broadening toward the Azores, and contracting again as it trends toward the northeast coast of South America. The depth over the ridge is less than 1,000 fathoms, while the valleys on either side average 3,000; it is known after the U. S. vessel which took the soundings as the Dolphin ridge. A similar though more uniformly narrow ridge was found by the "Challenger" expedition (1873–76), extending from somewhat north of Ascension Island directly south between South America and Africa. It is known as the Challenger ridge. There is, beside, evidence for the existence of a ridge across the tropical Atlantic, connecting the Dolphin and Challenger ridges. Madeira, the Canaries, and the Cape Verde Islands are cut off from these ridges by a deep valley, but are connected by shoals with the continent. Upon the publication of the Challenger chart (*Special Report*, vii. 1876), those who favored the theory of communication between the continents were not slow to appropriate its disclosures in their interests (*Nature*, Dec. 21, 1876, xv. 158). In March, 1877, W. Stephen Mitchell delivered a lecture at South Kensington, wherein he placed in juxtaposition the theory of Unger and the revelations of the deep-sea soundings, when he announced, however, that he did not mean to assert that these ridges had ever formed a connecting link above water between the continents.[7] Others were less cautious,[8] but in general this interpretation did not commend itself as strongly to conservative men of science as it might have done a few years before, because such men were gradually coming to doubt the fact of changes of great moment in the earth's surface, even those of great duration.

In 1869, M. Paul Gaffarel published his first treatise on Atlantis,[9] advocating the truth of the story, and in 1880 he made it the subject of deeper research, utilizing the facts which ocean exploration had placed at command.[10] This is the best work which has appeared upon this side of the question, and can only be set against he earlier work by Martin.[1] The same theory has been supported by D. P. de Novo y Colson, who went so ar as to predict the ultimate recovery of some Atlantean manuscripts from submarine grottoes of some of the tlantic islands, — a hope which surpasses Mr. Donnelly.[2]

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[1] G. R. Carli, *Delle Lettere Americane*, ii. (1780). Lettere, vii. and following; especially xiii. and following.

[2] Lyell, *Elements of Geology* (Lond., 1841), p. 141; and his *Principles of Geology*, 10th ed. Buffon dated the separation of the new and old world from the catastrophe of Atlantis. *Epoques de la Nat.*, ed. Flourens, ix. 570.

[3] *Quatres lettres sur la Mèxique; Popul Vuh*, p. xcix, and his *Sources de l'histoire primitive du Mèxique*, section viii. pp. xxiv, xxxiii, xxxviii and ix, in his edition of Diego da Landa, *Relation des choses de Yucatan* (Paris, 1864). H. H. Bancroft, *Nat. Races*, iii. 112, 264, 480; v. 127, develops Brasseur's theory. In his *Hist. Nat. Civilisées* he compares the condition of the Colhua kingdom of Xibalba with Atlantis, and finds striking similarities. Le Plongeon in his *Sacred Mysteries* (p. 92) accepts Brasseur's theory.

[4] A. Retzius, *Present state of Ethnology in relation to the form of the human skull* (Smithsonian Report, 1859), p. 266. The resemblance is not indorsed by M. Verneau, who has lately made a detailed study of the aborigines of the Canaries.

[5] F. Unger, *Die versunkene Insel Atlantis* (Wien, 1860). Translated in the *Journal of Botany* (London), January, 1865. Asa Gray had already called attention to the remarkable resemblance between the flora of Japan and that of eastern North America, but had not found the invention of a Pacific continent preferable to the hypothesis of a progress of plants of the temperate zone round by Behring's Strait (*Memoirs of the American Academy of Arts and Sciences*, vi. 377). Unger's theory has been also more or less urged in Heer's *Flora Tertiaria Helveticae* (1854–58) and his *Urwelt der Schweitz* (1865), and by Otto Ule in his *Die Erde* (1874), i. 27.

[6] *Sitzungsberichte der Math. Phys. Classe d. k. Akad. d. Wissensch.* at Vienna, lvii. (1868) p. 12.

[7] The "Lost Atlantis" and the "Challenger" soundings, *Nature*, 26 April, 1877, xv. 553, with sketch map.

[8] J. Starkie Gardner, *How were the eocenes of England deposited?* in *Popular Science Review* (London), July, 1878, xvii. 282. Edw. H. Thompson, *Atlantis not a Myth*, in *Popular Science Monthly*, Oct., 1879, xv. 759; reprinted in *Journal of Science*, Lond., Nov. 1879.

[9] *Etude sur les rapports de l'Atlantis et de l'ancien continent avant Colomb* (Paris, 1869).

[10] *Revue de Géographie*, Mars, Avril, 1880, tom. vi. et vii.

Winchell found the theory too useful in his scheme of ethnology to be rejected,[3] but it was reserved for gnatius Donnelly to undertake the arrangement of the deductions of modern science and the data of old raditions into a set argument for the truth of Plato's story. His book,[4] in many ways a rather clever state- ent of the argument, so evidently presented only the evidence in favor of his view, and that with so little ritical estimate of authorities and weight of evidence, that it attracted only uncomplimentary notice from the cientific press.[5] It was, however, the first long presentation of the case in English, and as such made an im- ression on many laymen. In 1882 was also published the second volume of the *Challenger Narrative*, ontaining a report by M. Renard on the geologic character of the mid-Atlantic island known as St. Paul's ocks. The other Atlantic islands are confessedly of volcanic origin, and this, which laymen interpreted in avor of the Atlantis theory, militated with men of science against the view that they were remnants of a unken continent. St. Paul's, however, was, as noted by Darwin, of doubtful character, and Renard came o the conclusion that it was composed of crystalline schists, and had therefore probably been once overlaid y masses since removed.[6] This conclusion, which tended in favor of Atlantis, was controverted by A. Geikie[7] nd by M. E. Wadsworth,[8] (the latter having personally inspected specimens,) on the ground that the rocks ere volcanic in origin, and that, had they been schists, the inference of denudation would not follow. Dr. uest declared that ethnologists have fully as good cause as the botanists to regard Atlantis as a fact.[9] A. J. Veise in treating of the Discoveries of America adopted the Atlantis fable unhesitatingly, and supposes that merica was known to the Egyptians through that channel.[10]

That the whole story was invented by Plato as a literary ornament or allegorical argument, or that he thus tilized a story which he had really received from Egypt, but which was none the less a myth, was maintained ven among the early Platonists, and was the view of Longinus. Even after the discovery of America many riters recognized the fabulous touch in it, as Acosta,[11] who thought, "being well considered, they are redicu- ous things, resembling rather to *Ovid's* tales then a Historie of Philosophie worthy of accompt," and "cannot e held for true but among children and old folkes" — an opinion adopted by the judicious Cellarius.[12]

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[1] See p. 46.

[2] *Ultima teoria sobre la Atlantida.* A paper read be- ore the Geographical Society at Lisbon. I have seen only e epitome in *Bolletino della Società Geografica Itali- na*, xvi. (1879), p. 693. Apparently the paper was pub- shed in 1881, in the proceedings of the fourth congress of mericanists at Madrid.

[3] Winchell, *Preadamites, or a demonstration of the xistence of man before Adam*, etc. (Chicago, 1880), pp. 78 and fol.

[4] Ignatius Donnelly, *Atlantis: the Antediluvian World* N. Y., 1882).

[5] His work is much more than a defence of Plato. He ttempts to show that Atlantis was the terrestrial paradise, e cradle of the world's civilization. I suppose it was is book which inspired Mrs. J. Gregory Smith to write *tla: a Story of the Lost Island* (New York, 1886).

Donnelly's book was favorably reviewed by Prof. Win- nell ("Ancient Myth and Modern Fact," *Dial*, Chicago, pril, 1882, ii. 284), who declared that there was no longer erious doubt that the story was founded on fact. His eory was enthusiastically adopted by Mrs. A. A. Knight *Education* (v. 317), and somewhat more soberly by Rev. P. McLean in the *Universalist Quarterly* (Oct., 1882, xxix. 436, "The Continent of Atlantis"). I have not een an article in *Kansas Review* by Mrs. H. M. Holden, uoted in *Poole's Index* (*Kan. Rev.*, viii. 435; also, viii. 6, 640). It was more carefully examined and its claims ejected by a writer in the *Journal of Science* (London), 'Atlantis once more," June, 1883; xx. 319–327). W. F. oole doubts whether Mr. Donnelly himself was quite seri- us in his theorizing ("Discoveries of America: the lost tlantis theory," *Dial*, Sept., 1884, v. 97). Lord Arundel Wardour controverted Donnelly in *The Secret of Plato's tlantis* (London, 1885), and believes that the Atlantis ble originated in vague reports of Hanno's voyage — a eory hardly less remarkable than the one it aims to dis- ace. Lord Arundel's book was reviewed in the *Dublin Review* (Plato's "Atlantis" and the "Periplus" of Hanno), July, 1886, xcix. 91.

[6] Renard, M., *Report on the Petrology of St. Paul's Rocks*, *Challenger Report*, *Narrative* (London, 1882), ii. Appendix B.

[7] *A search for "Atlantis" with the microscope*, in *Nature*, 9 Nov., 1882, xxvii. 25.

[8] *The microscopic evidence of a lost continent*, in *Science*, 29 June, 1883, i. 591.

[9] *Origines Celticae* (London, 1883), i. 119, etc.

[10] *The discoveries of America to the year 1525* (New York, 1884), ch. 1. Cf. Poole's review of this jejune work, quoted above, for some healthy criticism of this kind of writing (*Dial*, v. 97). Also a notice in the *Nation*, July 31, 1884.

The scientific theory of Atlantis is, I believe, supported by M. Jean d'Estienne in the *Revue des Questiones Scientifiques*, Oct., 1885, and by M. de Marçay, *Histoire des descouvertes et conquêtes de l'Amerique* (Limoges, 1881), but I have seen neither. H. H. Howorth, *The Mammoth and the Flood* (London, 1887), is struggling to revive the credit of water as the chief agent in the transformations of the earth's surface, and relies much upon the deluge myths, but refuses to accept Atlantis. He thinks the zoölogic evidence proves the existence in pleistocene times of an easy and natural bridge between Europe and America, but sees no need of placing it across the mid-Atlantic (p. 262).

[11] *The naturall and morall historie of the East and West Indies*, etc., *written in Spanish by Joseph Acosta, and translated into English by E. G[rimeston]* (London, 1604), p. 72, 73 (lib. i. ch. 22).

[12] *Notitiae orbis antiquae* (Amsterdam, 1703–6), 2 vols. The first ed. was Cantab., 1703. "Atlantica insula Platonis quae similior fabulae est quam chorographiae," lib. i. cap. xi. p. 32. In the *Additamentum de novo orbe an cognatus fuerit veteribus* (tome ii. lib. iv. pp. 164–166) Cellarius speaks more guardedly, and quotes with approval the judgment of Perizonius, which has been given above (p. 22).

Among more recent writers, D'Anville, Bartoli,[1] Gosselin,[2] Ukert,[3] approved this view.

Humboldt threw the weight of his great influence in favor of the mythical interpretation, though he found the germ of the story in the older geographic myth of the destruction of Lyctonia in the Mediterranean (Orph. *Argonaut.*, 1274, etc.); [4] while Martin, in his work on the *Timaeus*, with great learning and good sense, reduced the story to its elements, concluding that such an island had never existed, the tale was not invented by Plato, but had really descended to him from Solon, who had heard it in Egypt.

Prof. Jowett regards the entire narrative as "due to the imagination of Plato, who could easily invent 'Egyptians or anything else,' and who has used the name of Solon . . . and the tradition of the Egyptian priest to give verisimilitude to his story;" [5] and Bunbury is of the same opinion, regarding the story as "a mere fiction," and "no more intended to be taken seriously . . . than the tale of Er the Pamphylian." [6] Mr. Archer-Hind, the editor of the only separate edition of the *Timaeus* which has appeared in England, thinks it impossible to determine "whether Plato has invented the story from beginning to end, or whether it really more or less represents some Egyptian legend brought home by Solon," which seems to be a fitting conclusion to the whole matter.

The literature of the subject is widely scattered, but a good deal has been done bibliographically in some works which have been reserved for special mention here. The earliest is the *Dissertation sur l'Atlantide*, by Th. Henri Martin,[7] wherein, beside a carefully reasoned examination of the story itself and similar geographic myths, the opposing views of previous writers are set forth in the second section, *Histoire des Systèmes sur l'Atlantide*, pp. 258-280. Gaffarel has in like manner given a résumé of the literature, which comes down later than that of Martin, in the two excellent treatises which he has devoted to the subject; he is convinced of the existence of such an island, but his work is marked by such care, orderliness, and fulness of citations that it is of the greatest value.[8] The references in these treatises are made with intelligence, and are, in general, accurate and useful. That this is not the case with the work of Mr. Donnelly deprives the volume of much of the value which it might have had.[9]

E. FABULOUS ISLANDS OF THE ATLANTIC IN THE MIDDLE AGES. — Fabulous islands belong quite as much to the domain of folk-lore as to that of geography. The legends about them form a part of the great mass of superstitions connected with the sea. What has been written about these island myths is for the most part scattered in innumerable collections of folk-tales and in out-of-the-way sources, and it does not lie within the scope of the present sketch to track in these directions all that has been said. It will not be out of place, however, to refer to a few recent works where much information and many references can be found. One of the fullest collections, though not over-well sorted, is by Lieut. F. S. Bassett,[10] consisting of brief notes made in the course of wide reading, well provided with references, which are, however, often so abbreviated as o inflict much trouble on those who would consult them, — an all too common fault. Of interest is a chapter n *Les îles*, in a similar work by M. Paul Sebillot.[1] An island home has often been assigned to the soul after leath, and many legends, some mediæval, some of great antiquity, deal with such islands, or with voyages o them. Some account of these will be found in Bassett, and particularly in an article by E. Beauvois in the *Revue de l'histoire de Religion*,[2] where further references are to be found. Wm. F. Warren has also collected nany references to the literature of this subject in the course of his endeavor to show that Paradise was at the North Pole.[3] The long articles on *Eden* and *Paradise* in McClintock and Strong's *Biblical Encyclopedia* hould also be consulted.

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[1] *Essai sur l'explication historique donnée par Platon de sa République et de son Atlantide* (in *Reflexions impartiales sur le progrès réal ou apparent que les sciences et les arts ont faits dans le xviiie siècle en Europe*, Paris, 1780). The work is useful because it contains the Greek text (from a MS. in the Bibl. du Roi. Cf. *MSS. de la bibliothèque*, v. 261), the Latin translations of Ficinus and Serranus, several French translations, and the Italian of Frizzo and of Bembo.

[2] *Recherches sur les iles de l'océan Atlantique*, in the *Recherches sur la géographie des anciens*, i. p. 146 (Paris, 1797). Also in the French translation of Strabo (i. p. 268, note 3). Gosselin thought that Atlantis was nothing more than Fortaventure or Lancerote

[3] *Geogr. d. Griechen u. Römer*, i. 1, p. 59; ii. 1, p. 192. Cf. Letronne's *Essai sur les idées cosmographiques qui se rettachent au nom d'Atlas*, in the *Bull. Univ. des sciences* (Ferussac), March, 1831.

[4] *Examen Crit.*, i. 167–180; ii. 192.

[5] *The dialogues of Plato, translated by B. Jowett* (N. Y., 1873), ii. p. 587 (Introduction to Critias).

[6] Bunbury, *History of ancient geography*, i. 402.

[7] *Etude sur le Timée de Platon* (Paris, 1841), t. i. pp. 257-333.

[8] Paul Gaffarel, *Etude sur les rapports de l'Amérique et de l'ancien continent avant Christophe Colomb* (Paris, 1869), ch. 1er; *L'Atlantide*, pp. 3-27. The same author has more lately handled the subject more fully in a series of articles: *L'Atlantide*, in the *Revue de Géographie*, April–July, 1880; vi. 241, 331, 421; vii. 21, — which is the most detailed account of the whole matter yet brought together.

[9] One of the most recent résumés of the question is that by Salone in the *Grande Encyclopédie* (Paris, 1888, iv. p. 457). The *Encyclopædia Britannica*, by the way, regards the account, "if not entirely fictitious, as belonging to the most nebulous region of history."

A few miscellaneous references, of no great significance, may close this list: *Amer. Antiquarian*, Sept., 1886; H. H. Bancroft, *Nat. Races*, v. 123; J. S. Clarke's *Progress of Maritime Discovery*, p. ii. Geo. Catlin's *Lifted and Subsided Rocks of America* (Lond., 1870) illustrates "The Cataclysm of the Antilles." Dr. Chil, in the Nancy *Congrès des Américanistes*, i. 163. Foster's *Prehistoric Races*, app. E. Haven's *Archæol. U. S.* Irving's *Columbus*, app. xxii. Major's *Prince Henry* (1868), p. 87. Nadaillac's *Les Prem. Hommes*, ii. 114, and his *L'Amérique préhistorique*, 561. John B. Newman's *Origin of the Red Men* (N. Y., 1852). Prescott's *Mexico*, iii. 356. C. S. Rafinesque's incomplete *American Nations* (Philad.), and his earlier introduction to Marshall's *Kentucky*, and his *Amer. Museum* (1832). Two articles by L. Burke in his *Ethnological Journal* (London), 1848: *The destruction of Atlantis*, July; *The continent of America known to the ancient Egyptians and other nations of remote antiquity*, Aug. The former article is only a reprint of Taylor's trans. of Plato. Roisel's *Etudes ante-historiques* (Paris, 1874), devoted largely to the religion of the Atlanteans. Léon de Rosny's "L'Atlantide historique" in the *Mém. de la Soc. d'Ethnographie* (Paris, 1875), xiii. 33, 159, or *Revue Orientale et Américaine*. Short's *No. Americans of Antiquity*, ch. 11. Daniel Wilson's *Lost Atlantis* (Montreal, 1886), in *Proc. and Trans. Roy. Soc. of Canada*, 1886, iv. Cf. also *Poole's Index*, i. 73; ii. 27; and Larousse's *Grand Dictionnaire*.

[10] *Legends and Superstitions of the Sea and of Sailors in all Lands and at all Times* (Chicago and New York, 1885).

In what way the fabulous islands of the Atlantic originated is not known, nor has the subject been exhausively investigated. The islands of classical times, in part actual discoveries, in part born of confused eports of actual discoveries, and in part probably purely mythical, were very generally forgotten as ancient ivilization declined.[4] The other islands which succeeded them were in part reminiscences of the islands nown to the ancients or invented by them, and in part products of a popular mythology, as old perhaps as hat of the Greeks, but until now unknown to letters. The writers who have dealt with these islands have reated them generally from the purely geographic point of view. The islands are known principally from naps, beginning with the fourteenth century, and are not often met with in descriptive works. Formaleoni, n his attempt to show that the Venetians had discovered the West Indies prior to Columbus, made studies f the older maps which naturally led him to devote considerable attention to these islands.[5]

They are also considered by Zurla.[6] The first general account of them was given by Humboldt in the *Examen Critique*,[7] and to what he did little if anything has since been added. D'Avezac[8] treated the subect, giving a brief sketch of the islands known to the Arab geographers, — a curious matter which deserves nore attention.

Still more recently Paul Gaffarel has treated the matter briefly, but carefully.[9] A study of old maps by H. Vuttke, in the *Jahresbericht des Vereins für Erdkunde zu Dresden*,[10] gives considerable attention to the slands; and Theobald Fischer, in his commentary on the collection of maps reproduced by Ongania, has briefly ouched on the subject,[11] as has Cornelio Desimoni in various papers in the *Atti della Società Ligure di Storia atria*, xiv., and other years, in the *Atti dell' Acad. dei Nuova Lincei*, in the *Gionale ligustico*, etc. R. H. Iajor's *Henry the Navigator* should also be consulted.[12]

Strictly speaking, the term mythical islands ought to include, if not Frisland and Drogeo, at least the land f Bus, the island of Bimini with its fountain of life, an echo of one of the oldest of folk-tales, the island of axenburg, and the other non-existent islands, shoals, and rocks, with which the imagination of sailors and artographers have connected the Atlantic even into the present century. In fact, the name is by common onsent restricted to certain islands which occur constantly on old charts: the Island of St. Brandan, Antillia r Isle of the Seven Cities, Satanaxio, Danmar, Brazil, Mayda, and Isla Verte. It is interesting to note that ie Arab geographers had their fabulous islands, too, though so little is known of them that it is at present npossible to say what relation they bear to those mentioned. They say that Ptolemy assigned 25,000 islands the Atlantic, but they name and describe seventeen only, among which we may mention the Eternal Islands Canaries? Azores?),[13] El-Ghanam (Madeira?), Island of the Two Sorcerers (Lancerote?), etc.[14]

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[1] *Légendes, croyances de la mer.* 2 vols. (Paris, 1886.) ee ch. 9 in 1ere série.

[2] *L'Elysée transatlantique et l'Eden Occidental* (Maiuin, Nov.-Dec., 1883), vii. 273; viii. 673.

[3] *Paradise Found: the Cradle of the Human Race at e North Pole* (Boston, 1885), 4th ed.

[4] Eumenius (?), in the third century A. D., is doubtful out the existence even of the Fortunate Isles (i. e. the anaries). *Eumenii panegyricus Constantino Aug.*, vii., Valpy's *Panegyrici veteres* (London, 1828), iii. p. 1352. aehrens credits this oration to an unknown author. Maertinus appears to know them from the poets only (*Ibid.* 1529).

[5] *Saggio sulla nautica antica dei Veneziani*, n. p., n. d. 'enice, 1783); French translation (Venice, 1788).

[6] *Il mappamondo di Fra Mauro descritto ed illustrato* 'enice, 1806). *Di Marco Polo e degli altri viaggiatori neziani . . . con append. sopra le antiche mappe lavorate Venezia* (Venice, 1818).

[7] ii. 156, etc.

[8] D'Avezac: *Iles d'Afrique* (Paris, 1848) 2e *partie; es connues des Arabes*, pp. 15; *Les îles de Saint-Branin*, pp. 19; *Les îles nouvellement trouvées du quinzième cle*, pp. 24. The last two pieces had been previously blished under the title *Les îles fantastiques de l'Ocean cidental au moyen âge*, in the *Nouvelles Annales des oyages* (Mars, Avril, 1845), 2d série, i. 293; ii. 47.

[9] *Les îles fantastiques de l'Atlantique au moyen âge.* Lyon [1883], pp. 15. This is apparently extracted from the *Bulletin de la Société de Géographie de Lyon* for 1883.

[In *Poole's Index* is a reference to an article on imaginary islands in *London Society*, i. 80, 150.]

[10] "Zur Geschichte der Erdkunde in der letzten Hälfte des Mittelalters. Die Karten der seefahrenden Völker Süd-Europas bis zum ersten Druck der Erdbeschreibung des Ptolemaeus." *Jahresbericht*, vi. vii. (1870). Accompanying the article are sketches of the principal mediæval maps, which are useful if access to the more trustworthy reproductions cannot be had.

[11] *Sammlung mittelalterlicher Welt- und Seekarten italienischen Ursprungs*, etc. (Venice, 1886), especially pp. 14-22, and under the notices of particular maps in the second part.

[12] *The Life of Prince Henry of Portugal, surnamed the Navigator*, etc. London, 1868.

[13] The position of these islands and the fact that the Arabs believed that they were following Ptolemy in placing in them the first meridian seems almost conclusive in favor of the Canaries; but M. D'Avezac is inclined in favor of the Azores, because the Arabs place in the Eternal Isles certain pillars and statues warning against further advance westward, which remind him of the equestrian statues of the Azores, and because Ebn Sáyd states that the Islands of Happiness lie between the Eternal Islands and Africa.

[14] D'Avezac, *Iles d'Afrique*, ii. 15. *Géographie d'Abul-Fada trad. par M. Reinaud et M. Guiyard* (Paris,

There has been some difference of opinion as to which of the Atlantic islands answer to the ancient conception of the Fortunate Islands. It is probable that the idea is at the bottom of several of these, but it may be doubted whether the island of St. Brandan is not entirely due to the christianizing of this ancient fable.

We proceed now to examine the accounts of some of these islands.

St. Brandan. — St. Brandan, or Brendan, who died May 16, 577, was Abbot of Cluainfert, in Ireland, according to the legend, where he was visited by a friend, Barontus, who told him that far in the ocean lay an island which was the land promised to the saints. St. Brandan set sail for this island in company with 75 monks, and spent seven years upon the ocean, in two voyages (according to the Irish text in the MS. *book of Lismore*, which is probably the most archaic form of the legend), discovering this island and many others equally marvellous, including one which turned out to be the back of a huge fish, upon which they celebrated Easter. This story cannot be traced beyond the eleventh century, its oldest form being a Latin prose version in a MS. of that century. It is known also in French, English, and German translations, both prose and verse, and was evidently a great favorite in the Middle Ages. Intimately connected with the St. Brandan legend is that of St. Malo, or Maclovius, Bishop of Aleth, in Armorica, a disciple of St. Brandan, who accompanied his superior, and whose eulogists, jealous of the fame of the Irish saint, provided for the younger a voyage on his own account, with marvels transcending those found by Brandan. His church-day is November 17th. The story of St. Brandan is given by Humboldt and D'Avezac,[1] and by Gaffarel.[2] Further accounts will be found in the *Acta Sanctorum* of the Bollandists,[3] and in the introductions and notes to the numerous editions of the voyages, among which reference only need be made to the original Latin edited by M. Jubinal,[4] and to the English version edited by Thomas Wright for the Percy Society.[5] A Latin text of the fourteenth century is now to be found in the *Acta Sanctorum Hiberniae ex codice Salmanticensi nunc premium integre edita opera C. de Smedt et J. de Backer* (Edinb. etc., 1888), 4to, pp. 111–154. As is well known, Philoponus gives an account of the voyages of St. Brandan with a curious map, in which he places the island N. W. of Spain and N. E. of the Canaries, or *Insulae Fortunatae*.[6] The island of St. Brandan was at first apparently imagined in the north, but it afterward took a more southerly location. Honoré d'Autun identifies it with a certain island called Perdita, once discovered and then lost in the Atlantic; we have here, perhaps, some reminiscence of the name "Aprositos," which Ptolemy bestows on one of the *Fortunatae Insulae*.[7] In some of the earlier maps there is an inlet on the west coast of Ireland called *Lacus Fortunatus*, which is packed with islands which are called *Insulae Fortunatae* or *Beatae*, and sometimes given as 300 or 368 in number.[8] But the Pizigani map of 1367 puts the *Isole dicte Fortunate S. Brandany* in the place of Madeira; and Behaim's globe, in 1492, sets it down in the latitude of Cape de Verde, — a legend against it assigning the discovery to St. Brandan in 565.

It is this island which was long supposed to be seen as a mountainous land southeast of the Canaries. After the discovery of the Azores expeditions were fitted out to search for it, and were continued until 1721, which are described by Viera, and have been since retold by all writers on the subject.[9] The island was again reported as seen in 1759.

Antillia, or Isle of Seven Cities. — The largest of these islands, the one most persistent in its form and location, is Antillia, which is depicted as a large rectangular island, extending from north to south, lying

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1848–83). 2 vols. The first volume contains a treatise on Arabian geographers and their systems. *Géographie d'Edrisi trad. par M. Jaubert* (Paris, 1836–40). 2 vols. 4to (Soc. de Géogr. de Paris, *Recueil de Voyages*, v., vi.) Cf. Cherbonneau on the Arabian geographers in the *Revue de Géographie* (1881).

[1] Humboldt, *Examen Crit.*, ii. 163; D'Avezac, *Iles d'Afrique*, ii. 19; St. Malo's voyage by Beauvois, *Rev. Hist. Relig.*, viii. 986.

[2] *Les voyages de Saint Brandan et des Papoe dans l'Atlantique au moyen-âge*, published by the Soc. de Géogr. de Rochefort (1881). See also his *Rapports de l'Amérique et de l'ancien continent* (Paris, 1869), p. 173–183. The article *Brenden* in Stephen's *Dict. of National Biography*, vol. vi. (London, 1886), should be consulted.

[3] 16 May; *Maii*, tom. ii. p. 699.

[4] *La légende latine de S. Brandaines, avec une traduction inédite*, etc. (Paris, 1836). M. Jubinal gives a full account of all manuscripts.

[5] *St. Brandan, a mediæval legend of the sea, in English prose and verse* (London, 1844). The student of the subject will find use for *Les voyages de Saint Brandan à la recherche du paradis terrestre, legend en vers du XIIe siècle, avec introduction par Francisque Michel* (Paris, 1878), and "La legende Flamande de Saint Brandan et du bibliographie" by Louis de Backer in *Miscellanées bibliographiques*, 1878, p. 191.

[6] *Nova typis transacta navigatio. Novi orbis India occidentalis*, etc. (1621), p. 11.

[7] Honoré d'Autun, *Imago Mundi*, lib. i. cap. 36. In *Maxima Bibliotheca Veterum Patrum* (Lugd., 1677), tom. xx. p. 971.

[8] Humboldt (*Examen Critique*, ii. 172) quotes these islands from Sanuto Torsello (1306). They appear on a map of about 1350, preserved in St. Mark's Library at Venice (Wuttke, in *Jahresber. d. Vereins für Erdkunde zu Dresden*, xvi. 20), as "*I fortunate I beate*, 368," in connection with *La Montagne de St. Brandan*, west of Ireland. They are also in the Medicean Atlas of 1351, and in Fra Mauro's map and many others.

[9] *Noticias de la historia general de las islas de Canaria*, by D. Jos. de Viera y Clavijo, 4 vols. 4to (Madrid, 1772–83). Humboldt, *Examen*, ii. 167. D'Avezac, *Iles d'Afrique*, ii. 22, etc. *Les îles fortunées ou archipel des Canaries* [by E. Pégot-Ogier], 2 vols. (Paris, 1862), i. ch. 13. Saint-Borondon (*Aprositus*), pp. 186–198. *Teneriffe and its six satellites*, by O. M. Stone, 2 vols. (London, 1887), i. 319. This mirage probably explains the *Perdita* of Honoré and the *Aprositos* of Ptolemy. Cf. O. Peschel's *Abhandlungen zur Erd- und Völkerkunde* (Leipzig, 1877), i. 20. A similar story is connected with Brazil.

the mid-Atlantic about lat. 35° N. This island first appears on the map of 1424, preserved at Weimar, and found on the principal maps of the rest of the century, notably in the Bianco of 1436.[1] On some maps of the teenth and seventeenth centuries appears a smaller island under the name of Sette Citade, or Sete Ciuda-s, which is properly another name for Antillia, as Toscanelli says in his famous letter, wherein he recommended tillia as likely to be useful as a way-station on the India voyage. We owe to Behaim the preservation on globe of 1492 of the legend of this island. It was discovered and settled, according to him, by refugees m Spain in 714, after the defeat of King Roderick by the Moors. The settlers were accompanied by an hbishop and six bishops, each of whom built him a town. There is a story that the island was rediscovered a Portuguese sailor in 1447.[2]

In apparent connection with *Antillia* are the smaller islands *Danmar* or *Tanmar*, *Reillo* or *Royllo*, and *tanaxio*. The latter alone is of special interest. Formaleoni found near Antillia, on the map of Bianco of 36, an island with a name which he read as " Y^{d} laman Satanaxio," — a name which much perplexed him, til he found, in an old Italian romance, a legend that in a certain part of India a great hand arose every day m the sea and carried off the inhabitants into the ocean. Adapting this tale to the west, he translated the ne "Island of the hand of Satan,"[3] in which interpretation Humboldt acquiesced. D'Avezac, how-r, was inclined to think that there were two islands, one called Delamar, a name which elsewhere appears Danmar or Tanmar, and Satanaxio, or, as it appears on a map by Beccario at Parma, *Satanagio*,[4] and sug-ts that the word is a corrupt form for S. Afanaxio or S. Atanagio, *i. e.* St. Athanasius, with which Gaffarel nclined to agree.[5]

Formaleoni saw in *Antillia* a foreknowledge of the Antilles, and Hassel believed that North and South erica were respectively represented by Satanaxio and Antillia, with a strait between, just as the American tinent was indeed represented after the discovery. It is certainly curious that Beccario designates the up of Antillia, Satanagio, and Danmar, as *Isle de novo reperte*, the name afterwards applied to the dis-eries of Columbus; but it is not now believed that the fifteenth-century islands were aught but geo-phical fancies. To transfer their names to the real discoveries was of course easy and natural.[6]

BRAZIL. — Among the islands which prefigured the Azores on fourteenth-century maps appears *I. de Brazi* the Medicean portulano of 1351, and it is apparently Terceira or San Miguel.[7] On the Pizigani map of 7 appear three islands with this name, *Insula de Bracir* or *Bracie*, two not far from the Azores, and one the south or southeast end of Ireland. On the Catalan map of 1375 is an *Insula de Brazil* in the southern t of the so-called Azores group, and an *Insula de Brazil* (?) applied to a group of small islands enclosed heavy black ring west of Ireland. The same reduplication occurs in the Solerio of 1385, in a map of 1426

M. Buache in his *Mémoire sur l'Isle Antillia* (*Mém. t. de France*, *Sciences math. et phys.*, vi., 1806), read a copy of the Pizigani map of 1367, sent to him from ma, the inscription, *Ad ripas Antilliae* or *Antullio.* Buache's article in German in *Allg. Geogr. Epheme-en*, xxiv. 129. Humboldt (*Examen*, ii. 177) quotes Zurla *aggi*, ii. 324) as denying that such an inscription can be le out on the original: but Fischer (*Sammlung von lt-karten*, p. 19) thinks this form of the name can be le out on Jomard's fac-simile. Wuttke, however, thinks the word Antillia is not to be made out, and gives the ription as *Hoc sont statua q fuit ut tenprs A cules*, reads *Hoc sunt statuae quae fuerunt antea temporibus ules=Herculis* (Wuttke, *Zur Geschichte der Erdkunde ler letzten Haelfte des Mittelalters*, p. 26, in *Jahres-cht des Vereins für Erdkunde zu Dresden*, vi. and vii.,). The matter is of interest in the story of the eques-n statue of Corvo. According to the researches of nboldt, this story first appears in print in the history Portugal by Faria y Sousa (*Epitome de las historias tuguezas*, Madrid, 1628. *Historia del Reyno de Por-l*, 1730), who describes on the "Mountain of the w," in the Azores, a statue of a man on horseback ting westward. A later version of the story mentions estern promontory in *Corvo* which had the form of a on pointing westward. Humboldt (ii. 231), in an inter-g sketch, connects this story with the Greek traditions he columns of Hercules at Gades, and with the old ion that beyond no one could pass; and with the curi-Arabic stories of numberless columns with inscriptions ibiting further navigation, set up by *Dhoulcarnain*, an ian hero, in whose personality Hercules and Alexander Great are curiously compounded (see *Edrisi*). Hum-t quotes from Euache a statement that on the Pizigani of 1367 there is near Brazil (Azores) a representation person holding an inscription and pointing westward.

[2] Fernan Colomb, *Historia*, ch. 9; Horn, *De Originibus Amer.* p. 7, quoted by Gaffarel in his *Les îles fantastiques*, p. 3, *note* 1, 2. D'Avezac, *Iles d'Afrique*, ii. 27, quotes a similar passage from Medina (*Arte naviguar*), who found it in the Ptolemy dedicated to Pope Urban (1378–1389). According to D'Avezac (*Iles*, ii. 28), a "geographical document" of 1455 gives the name as *Antillis*, and identifies it with Plato's *Atlantis.*

[3] Formaleoni, *Essai*, 148.

[4] D'Avezac marks as wrong the reading *Sarastagio* of Humboldt.

[5] D'Avezac, *Iles d'Afrique*, ii. 29; Gaffarel, *Iles fantastiques*, 12. Fischer (*Sammlung*, 20) translates *Satanaxio*, *Satanshand*, but thinks the island of *Deman*, which appears on the Catalan chart of 1375, is meant by the first half of the title. The Catalan map, fac-similed by Buchon and Foster in the *Notices et extraits des documents*, xiv. 2, has been more exactly reproduced in the *Choix des documents géographiques conservées à la Bibl. Nat.* (Paris, 1883).

[6] Peter Martyr, in 1493, states that cosmographers had determined that Hispaniola and the adjacent isles were *Antillae insulae*, meaning doubtless the group surrounding Antillia on the old maps (*Decades*, i. p. 11, ed. 1583); but the name was not popularly applied to the new islands until after Wytfliet and Ortelius had so used it (Humboldt, *Examen*, ii. 195, etc.). But Schöner, in the dedicatory letter of his globe of 1523, says that the king of Castile through Columbus has discovered *Antiglias Hispaniam Cubam quoque* (Stevens, *Schöner*, London, 1888, fac-simile of letter). In the same way the name Seven Cities was applied to the pueblos of New Mexico by their first discoverers, and Brazil passed from an island to the continent.

[7] Humboldt identified it with *Terceira*, but Fischer questions whether St. Michael does not agree better with the easterly position constantly assigned to Brazil.

preserved at Regensburg. in Bianco's map of 1436, and in that of 1448: here *de Braxil* is the easternmost the Azores group (i. e. *y de Colombi*, *de Zorzi*, etc.), while the large round island — more like a large ink-bl than anything else — west of Ireland is *y de Brazil d. binar.*[1] In a map in St. Mark's Library, Venice, dat about 1450, Brazil appears in four places. Fra Mauro puts it west of Ireland.[2] and it so appears in Ptoler of 1519, and Ramusio in 1556; but Mercator and Ortelius inscribe it northwest of the Azores.

Humboldt has shown[3] that brazil-wood, being imported into Europe from the East Indies long before t discovery of America, gave its name to the country in the west where it was found in abundance, and infers that the designation of the Atlantic island was derived from the same source. The duplication of t name, however, seems to point to a confusion of different traditions, and in the Brazil off Ireland we doubtle have an attempt to establish the mythical island of *Hy Brazil*, or *O'Brasile*, which plays a part as a vanishi island in Irish legends, although it cannot be traced to its origin. In the epic literature of Ireland relating events of the sixth and subsequent centuries, and which was probably written down in the twelfth, there a various stories of ocean voyages, some involuntary, some voluntary, and several, like the voyage of the sons Ua Corra about 540, of St. Brandan about 560, and of Mailduin in the eighth century, taking place in the Atla tic, and resulting in the discovery of numerous fabulous islands.[4] The name of Brazil does not appear in the early records, but it seems to belong to the same class of legends.[5] It is first mentioned, as far as I kno by William Betoner, called William of Worcester, who calls the island *Brasyle* and *Brasylle*, and says th July 15, 1480, his brother-in-law, John Jay, began a voyage from Bristol in search of the island, returni Sept. 18 without having found it.[6] This evidently belongs to the series of voyages made by Bristol men search of this island, which is mentioned by Pedro d'Ayala, the Spanish ambassador to England, in his famo letter of July 25, 1498, where he says that such voyages in search of *Brazylle* and the *seven cities* had bee made for seven years past, "according to the fancies of the Genoese," meaning Sebastian Cabot.[7]

It would seem that the search for Brazil was of older date than Cabot's arrival. He probably gave additional impetus to the custom, adding to the stories of the fairy isles the legends of the *Sette Citade* *Antillia.* Hardiman,[8] quoting from a MS. history of Ireland, in the library of the Royal Irish Academ written about 1636, mentions an "iland, which lyeth far att sea, on the west of Connaught, and some times perceived by the inhabitants of the *Oules* and *Iris* . . . and from Saint Helen Head. Like wise several se men have discovered it, . . . one of whom, named Captain Rich, who lives about Dublin, of late years had view of the land, and was so neere that he discovered a harbour . . . but could never make to land" becaus of "a mist which fell upon him. . . . Allsoe in many old mappes . . . you still find it by the name of *O'Br* *sile* under the longitude of 03°, 00′, and the latitude of 50° 20′."[9] In 1675 a pretended account of a visit this island was published in London, which is reprinted by Hardiman.[10]

An account of the island as seen from Arran given in O'Flaherty's *Sketch of the Island of Arran*,[11] is quote by H. Halliday Sterling, *Irish Minstrelsy*, p. 307 (London, 1887). Mr. Marshall, in a note in *Notes an*

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[1] The Bianco map of 1436 has, on the ocean sheets, five groups of small islands, from south to north: (1) Canaries; (2) Madeira and Porto Santo; (3) *luto* and *chapisa*; (4) *d. brasil*, *di colonbi*, *d. b. ntusta*, *d. sanzorzi*; (5) *coriios* and *corbo marinos*; (6) *de ventura*; (7) *de brazil.* West of the third and fourth lies *Antillia*, and N. W. of the fifth a corner of *de laman satanaxio*, while west of six and seven are numerous small islands unnamed. On the ocean sheet of the Bianco of 1448, we have (2) Madeira and Porto Santo; (3) *licongi* and *coruo marin*; (4) *de braxil*, *zorzi*, etc.; (5) *coriios* and *coruos marinos*; (6) *y. d. mam debentum*; (7) *y. d. brazil d. binar.* There is no Antillia and no Satanaxio, but west of (3) and (4) are two other groups: (1) *yd. diuechi marini*, *y de falconi*; (2) *y fortunat de s°. beati. blandan*, *dinferno*, *de ipauion*, *beta ixola*, *dexerta.* There is not much to be hoped from such geography.

[2] Over against Africa he has an *Isola dei Dragoni.* On the Pizigani map of 1367 the Brazil which lies W. of North France is accompanied by a cut of two ships, a dragon eating a man, and a legend stating that one cannot sail further on account of monsters. There was a dragon in the Hesperian isles, and some have connected it with the famous dragon-tree of the Canaries.

[3] *Examen*, ii. 216, etc.

[4] For an account of the Irish MSS. see Eugene O'Curry, *Lectures on the MS. material of ancient Irish history* (Dublin, 1861), lect. ix. p. 181; H. d'Arbois de Jubainville, *Introduction a l'étude de la littérature Celtique*, 2 vols. (Paris, 1883), i. chap. 8, p. 349, etc.; also *Essa d'un catalogue de la littérature épique d'Irlande*, by the same author (Paris, 1883). For accounts of the voyages see O'Curry, p. 252, and especially p. 289, where a sketch of that of the sons of *Ua Corra* is given. A list of the vo ages is given by D'Arbois de Jubainville in his *Essai*, unde *Longeas* (involuntary voyages) and *Immrain* (voluntar voyages), with details about MSS. and references to text and translations (*Mailduin*, p. 151; *Ua Corra*, 152 See also Beauvois, *Eden occidental*, *Rev. de l'Hist. d* *Relig.*, viii. 706, 717, for voyages of *Mailduin* and the son of *Ua Corra*, and of other voyages. Also Joyce, *Old Ce* *tic romances* (London, 1879). Is M. Beauvois in earnes when he suggests that the talking birds discovered by Mail duin (and also by St. Brandan) were probably parrots, an their island a part of South America?

[5] The name is derived by Celtic scholars from *breas* large, and *i*, island.

[6] *Gulielmi de Worcester Itineraria*, ed. J. Nasmyt (Cantab., 1778), p. 223, 267. I take the quotation from *Notes and Queries*, Dec. 15, 1883, 6th series, viii. 475 The latter passage is quoted in full in *Bristol, past an* *present*, by Nicholls and Taylor (London, 1882), iii. 292 Cf. H. Harrisse's *C. Colomb.*, i. 317.

[7] *Cal. State Papers, Spanish*, i. p. 177.

[8] *Irish Minstrelsy, or bardic remains of Ireland*, etc. 2 vols. (London, 1831), i. 368.

[9] This is very nearly its position in the *Arcano del Mare* of Dudley, 1646 (Europe 28), where it is called "disabitata e incerta."

[10] i. 369. *O-Brazile, or the enchanted island, being a perfect relation of the late discovery and wonderful disenchantment of an island on the North* [*sic*] *of Ireland*, etc. (London, 1675).

[11] John T. O'Flaherty, *Sketch of the History and antiquities of the southern islands of Aran*, etc. (Dublin, 1884, in *Roy. Irish Acad. Trans.*, vol. xiv.)

Queries, Sept. 22, 1883 (6th s., viii. 224), quotes Guest, *Origines Celticae* (London, 1883), i. 126, and R. O'Flaherty, *Ogygia, sive rerum Hibernicarum chronologiae* (London, 1685; also in English translaion, Dublin, 1793), as speaking of O'Brazile. The latter work I have not seen. Mr. Marshall also quotes ı familiar allusion to it by Jeremy Taylor (*Dissuasive from Popery*, 1667). This note was replied to in he same periodical, Dec. 15, 1883, by Mr. Kerslake, "N." and W. Fraser. Fraser's interest had been ttracted by the entry of the island — much smaller than usual — on a map of the French Geographer Royal, Le Sieur Tassin, 1634–1652, and he read a paper before the Geological Society of Ireland, Jan. 20, 1870, sugesting that Brazil might be the present *Porcupine Bank*, once above water. On the same map *Rockall* is aid down as two islands, where but a solitary rock is now known.[1] Brasil appears on the maps of the last wo centuries, with *Mayda* and *Isle Verte*, and even on the great Atlas by Jefferys, 1776, is inserted, although alled "imaginary island of O'Brasil." It grows constantly smaller, but within the second half of this entury has appeared on the royal Admiralty charts as *Brazil Rock*.[2]

It would be too tedious to enumerate the numerous other imaginary islands of the Atlantic to which clouds, ogs, and white caps have from time to time given rise. They are marked on all charts of the last century in rofusion; mention, however, may be made of the "land of *Bus*" or *Busse*, which Frobisher's expedition oasted along in 1576, and which has been hunted for with the lead even as late as 1821, though in vain.

F. Toscanelli's Atlantic Ocean. — It has been shown elsewhere (Vol. II. pp. 30, 31, 38, 90, 101, 103) hat Columbus in the main accepted the view of the width of the Atlantic, on the farther side of which Asia vas supposed to be, which Toscanelli had calculated; and it has not been quite certain what actual measurenent should be given to this width, but recent discoveries tend to make easier a judgment in the matter.

When Humboldt wrote the *Examen Critique*, Toscanelli's letter to Columbus, of unknown date,[3] enclosing a copy of the one he sent to Martinez in 1474, was known only in the Italian form in Ulloa's translation of he *Historie del S. D. Fernando Colombo* (Venice, 1571), and in the Spanish translation of Ulloa's version by Barcia in the *Historiades primitivos de las Indias occidentales* (Madrid, 1749), i. 5 bis, which was reprinted by Navarrete, *Coleccion de los viages y descubrimientos*, etc., ii. p. 1. In the letter to Martinez, in this form, it s said that there are in the map which accompanied it twenty-six *spaces* between Lisbon and *Quisai*, each space containing 250 miles according to the Ulloa version, but according to the re-translation of Barcia 150 miles. This, with several other changes made by Barcia, were followed by Navarrete and accepted as correct by Humboldt, who severely censures Ximenes for adopting the Italian rendering in his *Gnomone fiorent.* But the Latin copy of the letter in Columbus's handwriting, discovered by Harrisse and made public (with fac-simile) in his *D. Fernando Colon* (Seville, 1871),[4] sustained the correctness of Ulloa's version, giving 250 miliaria to the space. This authoritative rendering also showed that while the translator had in general folowed the text, he had twice inserted a translation of miles into degrees, and once certainly, incorrectly, making n one place 100 miles = 35 leagues, and in another, 2,500 miles = 225 leagues. Probably this discrepancy ed to the omissions made by Barcia; he was wrong, however, in changing the number 250, supposing the 150 not to be a typographical error, and in omitting the phrase, "which space (from Lisbon to Quinsai) is about he third part of the sphere." The Latin text showed, too, that this whole passage about distances was not in he Martinez letter at all, but formed the end of the letter to Columbus, since in the Latin it follows the date of the Martinez letter, into which it has been interpolated by a later hand. Finally the publication of Las Casas's *Historia de las Indias* (Madrid, 1875) gave us another Spanish version, which differs from Barcia's in closely agreeing with the Ulloa version, and which gives the length of a space at 250 miles.

There were then 26 × 250 = 6500 miles between Lisbon and Quinsai, and this was about one third of the circumference of the earth in this latitude, but it is not clear whether Roman or Italian miles were meant.

If the MS. in the Biblioteca Nazionale at Florence [*Cod. Magliabechiano Classe* xi. *num.* 121], described by G. Uzielli in the *Bollettino della Società Geografica Italiana*, x. 1 (1873), 13–28 ("Ricerche intorno a Paolo dal Pozzo Toscanelli, ii. Della grandezza della terra secondo Paolo Toscanelli"), actually represents the work of Toscanelli, it is of great value in settling this point. The MS. is inscribed "Discorso di M° Paolo Puteo Toscanelli sopra la cometa del 1456." In it were found two papers: 1. A plain projection in rectangular form apparently for use in sketching a map. It is divided into spaces, each subdivided into five degrees, and numbers 36 spaces in length. It is believed by Sig. Uzielli that this is the form used in the map sent to Martinez. If this be so, the 26 spaces between Lisbon and Quinsai = 130°. 2. A list of the latitude and longitude of various localities, at the end of which is inscribed this table:

Gradus continet .68 miliaria minus 3ª unius.
Miliarum tria millia bracchia.
Bracchium duos palmas.
Palmus. 12. uncias. 7. filos.

The Florentine mile of 3,000 braccia da terra contains, according to Sig. Uzielli, 1653.6m. (as against

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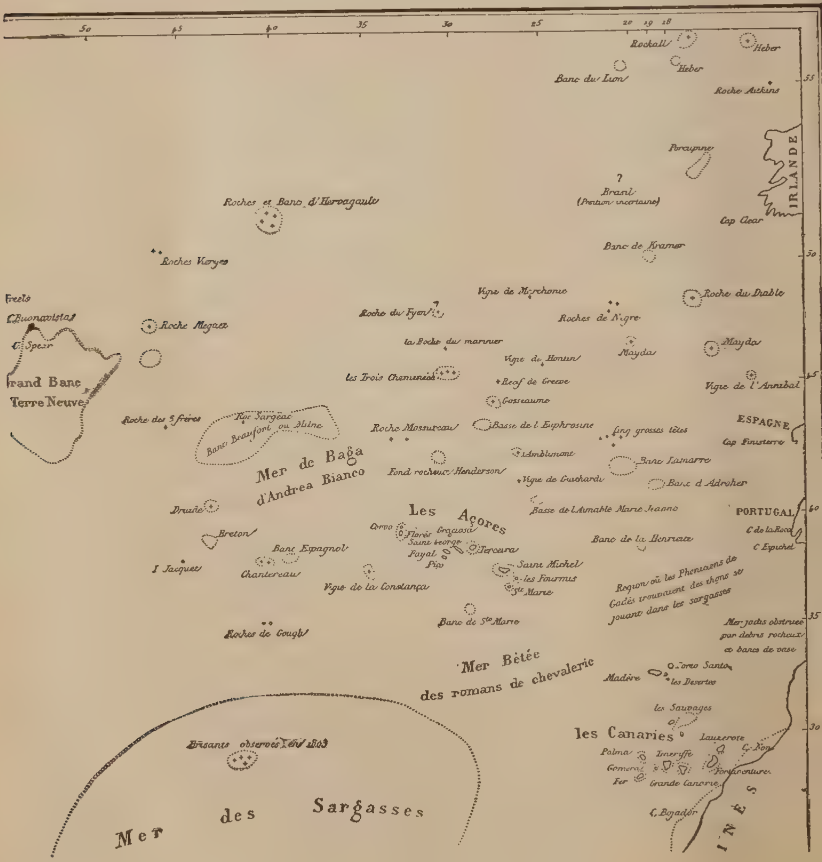
[1] *On Hy Brasil, a traditional island off the west coast of Ireland, plotted in a MS. map written by Le Sieur Tassin*, etc., in the *Journal of the Royal Geological Society of Ireland* (1879–80), vol. xv. pt. 3, pp. 128–131, *fac-simile of map.*

[2] In an atlas issued 1866, I observe *Mayda* and *Green Rock.*

[3] Harrisse would put it in 1482. See Vol. II. p. 90.

[4] Also in his *Bib. Amer. Vet.*, p. xvi.

1481m. to the Roman mile). Hence Toscanelli estimated a degree of the meridian at 111,927m, or only 552m, more than the mean adopted by Bessel and Bayer. Since, according to the letter, one space = 250 miles, and by the map one space = 5°, we have 50 miles to a degree, which would point to an estimate for a latitude of abou 42°, allowing 67·2-3 miles to an equatorial degree. Lisbon was entered in the table of Alphonso at 41° N. (true lat. 38° 41′ N.) By this reckoning Quinsai would fall 124° west of Lisbon or 10° west of San Francisco. It does not appear that the Florence MS. can be traced directly to Toscanelli, but the probability is certainly strong that we have here some of the astronomer's working papers, and that Ximenes did not deserve the rebuke administered by Humboldt for allowing 250 miles to a space, and assuming that a space contained five degrees. Certainly Humboldt's use of 150 miles is unjustifiable, and his calculation of 52° as the angular distance between Lisbon and Quinsai, according to Toscanelli, is very much too small, whatever standard we take for the mile. If we follow Uzielli, the result obtained by Ruge (*Geschichte des Zeitalters der Entdeckungen*, p. 230), 104°, is also too small.[1]



GAFFAREL'S MAP.*

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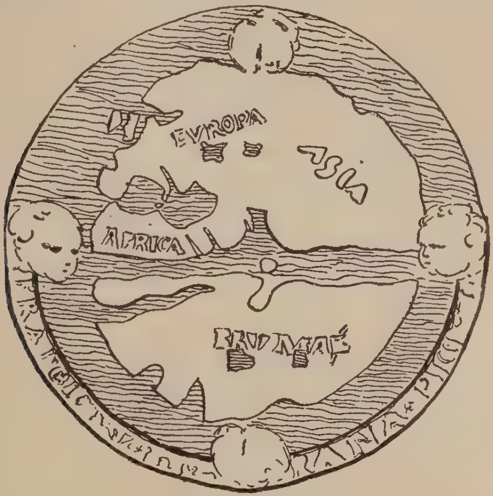
[1] The various versions of the letter are as follows: *Ulloa* (*Historie*, 1571, ch. 8). Dalla città di Lisbona per dritto verso ponente sono in detta carta ventisei spazi, ciascun de' quali contien dugento, & cinquanta miglia, fino alla . . . città di Quisai, la quale gira cento miglia, che son trentacinque leghe. . . . Questo spazio e quasi la terza part della sfera. . . . E dalla' Isola di Antilia, che voi chiamat di sette città, . . . fino alla . . . isola di Cipango sono die

* From a map by Gaffarel, "L'Océan Atlantique et les restes de l'Atlantide," in the *Revue de Géographie*, vi. 400, accompanying a paper by Gaffarel in the numbers for April-July, 1880, and showing such rocks and islets as hav from time to time been reported as seen, or thought to have been seen, and which Gaffarel views as vestiges of th lost continent.

G. EARLY MAPS OF THE ATLANTIC OCEAN. — *By the Editor.* — The cartographical history of the Atlantic Ocean is, even down to our own day, an odd mixture of uncertain fact and positive fable. The island of Bresil or Brazil was only left off the British Admiralty charts within twenty years (see Vol. II. p. 36), and editions of the most popular atlases, like Colton's, within twenty-five years have shown Jacquet Island, the Three Chimneys, Maida, and others lying in the mid-sea. It may possibly be a fair question if some of the reports of islands and rocks made within recent times may not have had a foundation in temporary uprisings from the bed of the sea.[1] We must in this country depend for the study of this subject on the great collections of fac-similes of early maps made by Santarem, Kunstmann, Jomard, and on the *Sammlung* which is now in progress at Venice, under the editing of Theobald Fischer, and published by Ongania.[2]

We may place the beginning of the Atlantic cartography[3] in the map of Marino Sanuto in 1306, who was first of the nautical map-makers of that century to lay down the Canaries;[4] but Sanuto was by no means sure of their existence, if we may judge from his omission of them in his later maps.[5]



FIFTEENTH CENTURY.*

spazi, che fanno due mila & cinquecento miglia, cioè dugento, & venticinque leghe.

Barcia. Hallareis en un mapa, que ai desde Lisboa, à la famosa ciudad de Quisay, tomando el camino derecho à Poniente, 26 espacios, cada uno de 150 millas. Quisai' tiene 25 leguas de ambitu. . . . De la isla Antilla hasta la de Cipango se quentan diez espacios, que hacen 225 leguas.

Las Casas: Y de la ciudad de Lisboa, en derecho por el Poniente, son en la dicha carta 26 espacios, y en cada uno dellos hay 250 millas hasta la . . . ciudad de Quisay, la ual etiene al cerco 100 millas, que son 25 leguas, . . . (este espacio es cuasi la tercera parte de la sfera) . . . é de la isla de Antil, . . . Hasta la . . . isla de Cipango hay 10 espacios que son 2,500 millas, es á sabre, 225 leguas.

Columbus's copy: A civitate vlixiponis per occidentem indirecto sunt .26. spacia in carta signata quorum quodlibet habet miliaria .250. usque ad nobilisim[am], et maxima ciuitatem quinsay. Circuit enim centum miliaria . . . hoc spatium est fere tercia pars tocius spere. . . . Sed ab insula Antilia vobis nota ad insulam . . . Cippangu sunt decem spacia.

[1] Cf. "Les îles Atlantique," by Jacobs-Beeckmans in the *Bull. de la Soc. géog. d'Anvers*, i. 266, with map.

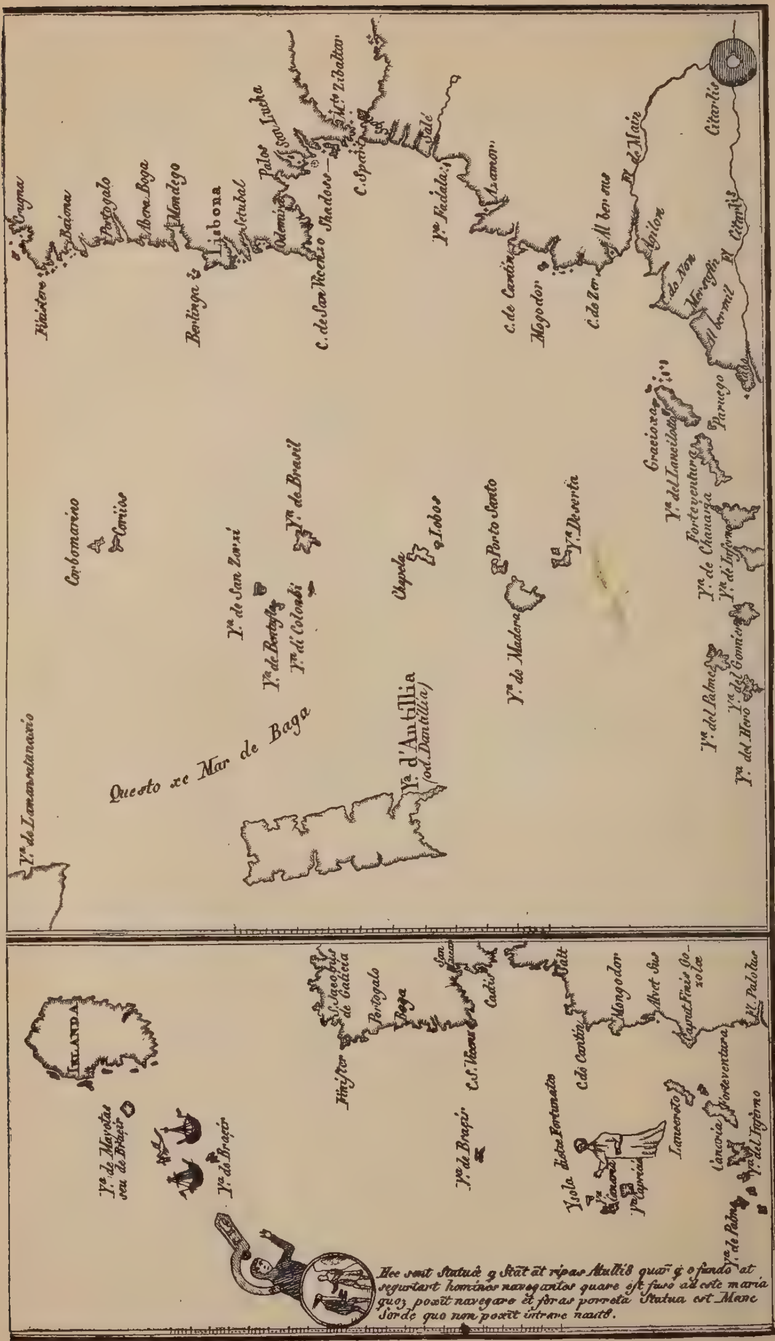
[2] Of these collections, those of Kunstmann and Jomard are not uncommon in the larger American libraries. A set of the Santarem series is very difficult to secure complete, but since the description of these collections in Vol. II. was written, a set has been secured for Harvard College library, and I am not aware of another set being in this country. The same library has the Ongania series. The maps in this last, some of which are useful in the present study, are the following: — 1. Arabic marine map, xiiith cent. (Milan); 2. Visconte, 1311 (Florence); 3. Carignano, xivth cent. (Florence); 4. Visconte, 1318 (Venice); 5. Anonymous, 1351 (Florence); 6. Pizigani, 1373 (Milan); 7. Anon., xivth cent. (Venice); 8. Giroldi, 1426 (Venice); 9. Bianco, 143, (Venice); 10. Anon., 1447 (Venice); 11. Bianco, 1448 (Milan); 12. Not issued; 13. Anon., Catalan, xvth cent. (Florence); 14. Leardo, 1452; 15. Fra Mauro, 1457 (Venice); 16. Cantino, 1501–3 (Modena). This has not been issued in this series, but Harrisse published a fac-simile in colors in connection with his *Les Corte-Real*, etc., Paris, 1883. 17. Agnese, 1554 (Venice). The names on these photographs are often illegible; how far the condition of the original is exactly reproduced in this respect it is of course impossible to say without comparison.

[3] The notions prevailing so far back as the first century are seen in the map of Pomponius Mela in Vol. II. p. 180.

[4] Vol. II. p. 36.

[5] Lelewel (ii. 119) gives a long account of Sanuto and his maps, and so does Kunstmann in the *Mémoires* (vii. ch. 2,

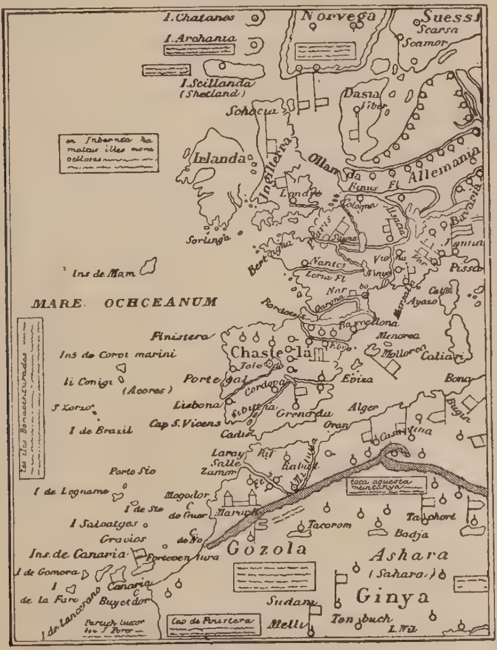
* A conventional map of the older period, which is given in Santarem's *Atlas* as a "Mappemonde qui se trouve au revers d'une Médaille du Commencement du XVe Siècle."



A. G. Ephem. 1807. IIo. Stk.

NOTE. — The above maps are reduced a little from the engraving in *Allgemeine Geographische Ephemeriden* (Weimar, 1807), vol. xxiv. p. 248. The smaller is an extract from that of Fr. Pizigani (1367), and the larger that of Andreas Bianco (1436). There is another fac-simile of the later in F. M. Erizzo's *Le Scoperte Artiche* (Venice, 1855).

There are two maps of Hygden (A. D. 1350), but the abundance of islands which they present can hardly be said to show more than a theory.[1] There is more likelihood of well considered work in the Portolano Laurenziano-Gaddiano (A. D. 1351), preserved in the Biblioteca Mediceo-Laurenziana at Florence, of which Ongania, of Venice, published a fac-simile in 1881.[2] There are two maps of Francisco Pizigani, which seem to give the Canaries, Madeira, and the Azores better than any earlier one. One of these maps (1367) is in the national library at Parma, and the other (1373) is in the Ambrosian library at Milan (*Studi biog. e bibliog.*, vol. ii. pp. viii, 57, 58). The 1367 map is given by Jomard and Santarem. The most famous of all these early maps is the Catalan Mappemonde of 1375, preserved in the great library at Paris. It gives the Canaries and other islands further north, but does not reach to the Azores.[3] These last islands are included, however, in another Catalan planisphere of not far from the same era, which is preserved in the national library at Florence, and has been reproduced by Ongania (1881).[4] The student will need to compare other maps of the fourteenth century, which can be found mentioned in the *Studi*, etc., with references in the *Kohl Maps*, sect. 1. The phototypic series of Ongania is the most important contribution to this study, though the yellow tints of the original too often render the details obscurely.[5] So for the next century there are the same guides; but a number of conspicuous charts may well be mentioned. Chief among them are those of Andrea Bianco contained in the Atlas (1436), in the Biblioteca Marciana at Venice, published by Ongania (1871), who also published (1881) the Carta Nautica of Bianco, in the Biblioteca Ambrosiana in Milan.[6]



CATALAN MAP, 1375.*

1855) of the Royal Bavarian Academy; but a more perfect inventory of his maps is given in the *Studi biog. e bibliog.* of the Italian Geographical Society (1882, i. 80; ii. 50). Cf. Peschel, *Gesch. der Erdkunde*, Ruge, ed. 1877, p. 210. Sanuto's map of 1320 was first published in his *Liber Secretorum fidelium crucis* (Frankfort, 1811. Cf. reproduction in St. Martin's *Atlas*, pl. vi. no. 3). Further references are in Winsor's *Kohl Maps*, no. 12. It is in part reproduced by Santarem.

[1] Cf. *Amer. Geog. Soc. Journal*, xii. 177, and references in the *Kohl Maps*, nos. 13 and 14.

[2] Vol. II. p. 38.

[3] Cf. references in Vol. II. 38.

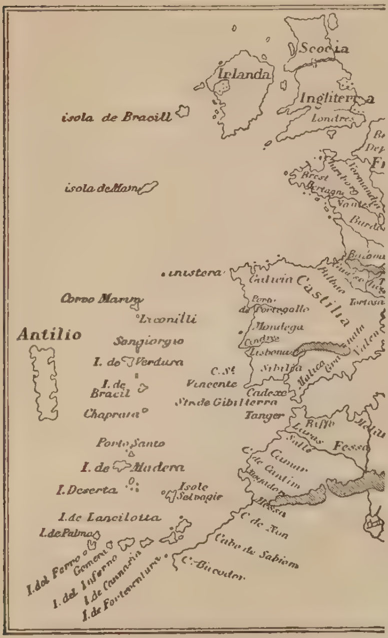
[4] Cf. *Studi*, etc., ii. no. 392.

[5] Cf. Desimoni's *Le carte nautiche Italiane del medio evo a proposito di un libro del Prof. Fischer* (Genoa, 1888).

[6] Cf. Vol. II. 38 for references; and Lelewel and Santarem's Atlases.

* After a sketch in St. Martin's *Atlas*, pl. vii.

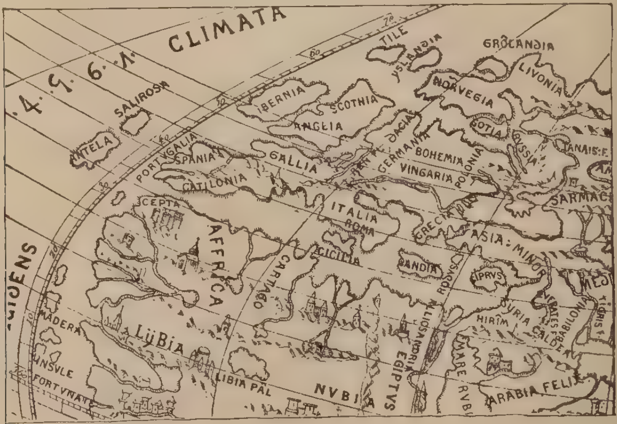
The 1436 map has been reproduced in colors in Pietro Amat de San Filippo's *Planisferio disegnato del 1436* (*Bollettino Soc. Geografia*, 1879, p. 560); and a sketch of the Atlantic part is given in the *Allgem. Geog. Ephemeriden*, xxiv. no. 248.[1]



ANDREAS BENINCASA, 1476.*

During the next twenty years or more, the varying knowledge of the Atlantic is shown in a number of maps, a few of which may be named:—The Catalan map "de Gabriell de Valsequa, faite à Mallorcha en 1439," which shows the Azores, and which Vespucius is said to have owned (Santarem, pl. 54). The planisphere "in lingua latina dell' anno 1447," in the national library at Florence (Ongania, 1881). The world maps of Giovanni Leardo (Johannes Leardus), 1448 and 1452, the former of which is given in Santarem (pl. 25, — also *Hist. Cartog.* iii. 398), and the latter reproduced by Ongania, 1880. One is in the Ambrosian library, and the other in the Museo Civico at Vicenza (cf. *Studi*, etc., ii. 72, 73). In the Biblioteca Vittorio Emanuele at Rome there is the sea-chart of Bartolomaeus de Pareto of 1455, on which we find laid down the Fortunate Islands, St. Brandan's, Antillia, and Royllo.[2] The World of Fra Mauro[3] has been referred to elsewhere in the present volume.

We come now to the conditions of the Atlantic cartography immediately preceding the voyage of Columbus. The most prominent specimens of this period are the various marine charts of Grogioso and Andreas Benincasa from 1461 to 1490. Some of these are given by Santarem, Lelewel, and St. Martin; but the best enumeration of them is given in the *Studi biog. e bibliog. della Soc. Geog. Ital.* ii. 66, 77–84, 92, 99, 100. Of Toscanelli's map of 1474, which influenced Columbus, we have no sketch, though some attempts have



LAON GLOBE.†

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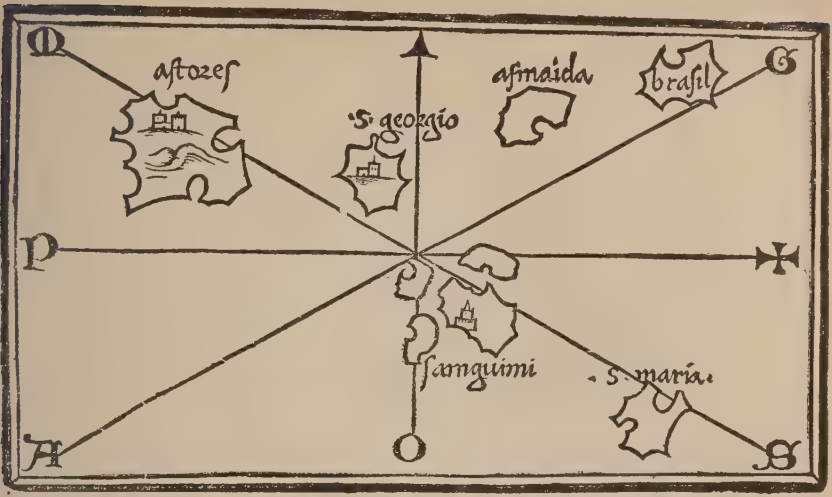
[1] Cf. *Studi*, etc., vol. ii. pp. viii, 67, 72, with references.

[2] Cf. Pietro Amat in the *Mem. Soc. Geografica*, Roma, 1878; *Studi*, etc., ii. 75; Winsor's *Bibliog. Ptolemy*, sub anno 1478.

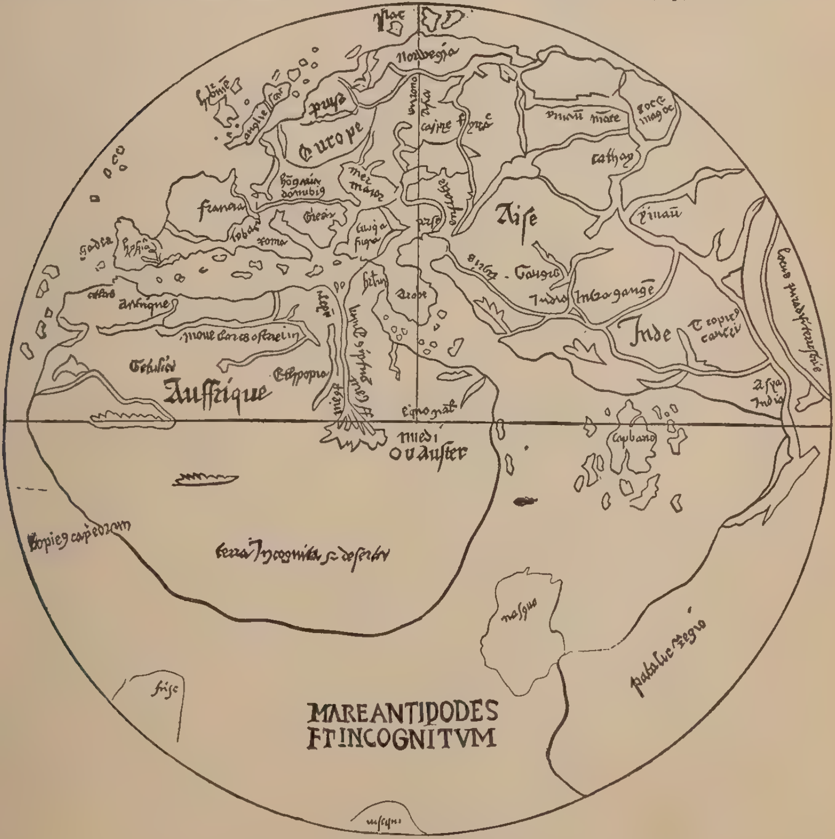
[3] Cf. account of inaugurating busts of Fra Mauro and John Cabot, in *Terzo Congresso Geografico internazionale* (held at Venice, Sept., 1881, and published at Rome, 1882), i. p. 33.

* After a sketch in St. Martin's *Atlas*, pl. vii.

† From a "projection Synoptique Cordiforme" in the *Bull. de la Soc. de Géog.*, 4e série, xx. (1860), in connection with a paper by D'Avezac (p. 398). Cf. Oscar Peschel in *Ausland*, May 12, 1861; also in his *Abhandlungen*, i. 226.



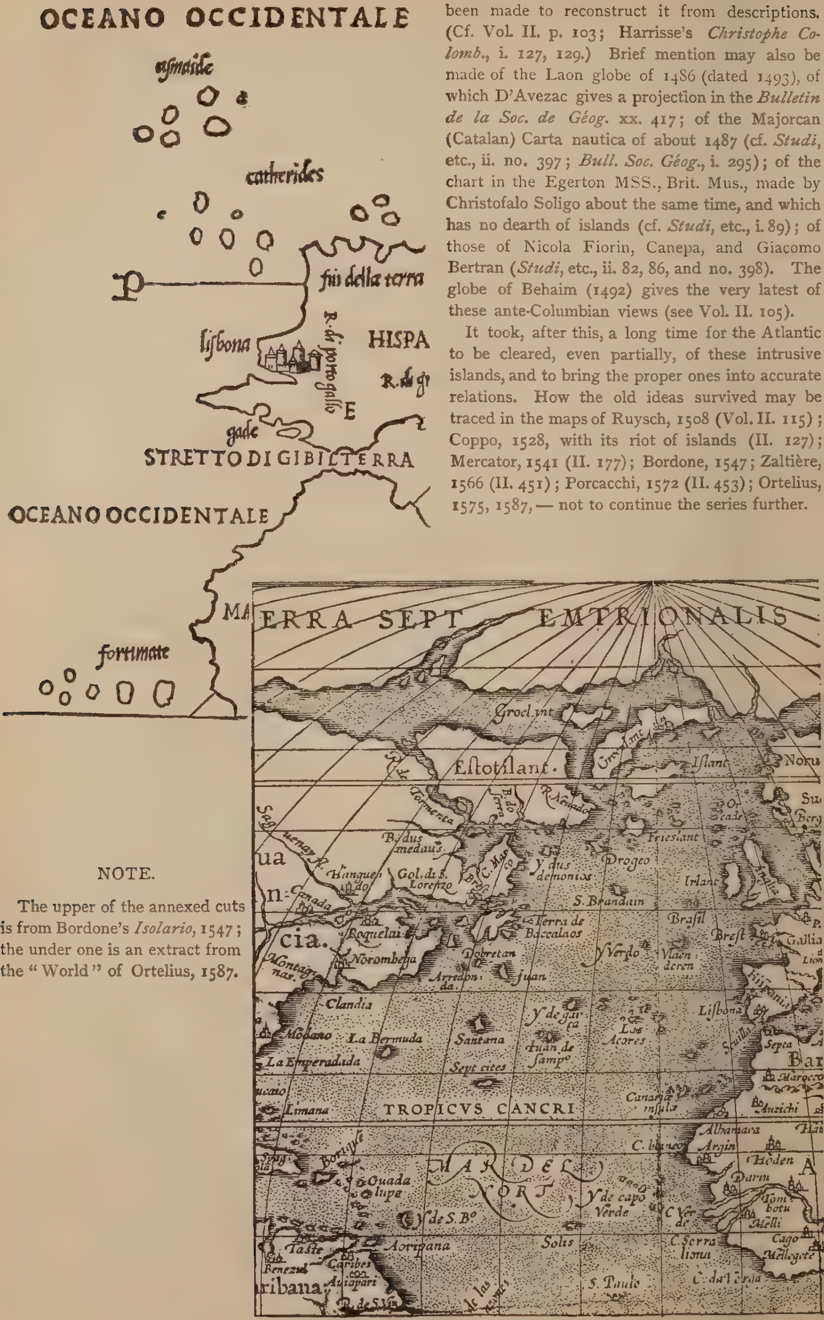
A Fac-simile from BORDONE, 1547.



END OF FIFTEENTH CENTURY. (Santarem's *Atlas.*)

been made to reconstruct it from descriptions. (Cf. Vol. II. p. 103; Harrisse's *Christophe Colomb.*, i. 127, 129.) Brief mention may also be made of the Laon globe of 1486 (dated 1493), of which D'Avezac gives a projection in the *Bulletin de la Soc. de Géog.* xx. 417; of the Majorcan (Catalan) Carta nautica of about 1487 (cf. *Studi*, etc., ii. no. 397; *Bull. Soc. Géog.*, i. 295); of the chart in the Egerton MSS., Brit. Mus., made by Christofalo Soligo about the same time, and which has no dearth of islands (cf. *Studi*, etc., i. 89); of those of Nicola Fiorin, Canepa, and Giacomo Bertran (*Studi*, etc., ii. 82, 86, and no. 398). The globe of Behaim (1492) gives the very latest of these ante-Columbian views (see Vol. II. 105).

It took, after this, a long time for the Atlantic to be cleared, even partially, of these intrusive islands, and to bring the proper ones into accurate relations. How the old ideas survived may be traced in the maps of Ruysch, 1508 (Vol. II. 115); Coppo, 1528, with its riot of islands (II. 127); Mercator, 1541 (II. 177); Bordone, 1547; Zaltière, 1566 (II. 451); Porcacchi, 1572 (II. 453); Ortelius, 1575, 1587, — not to continue the series further.



NOTE.

The upper of the annexed cuts is from Bordone's *Isolario*, 1547; the under one is an extract from the "World" of Ortelius, 1587.

CHAPTER II.

PRE-COLUMBIAN EXPLORATIONS.

BY JUSTIN WINSOR, THE EDITOR.

IN the previous chapter, in attempting to trace the possible connection of the new world with the old in the dimmest past, it was hard, if not hopeless, to find among the entangled myths a path that we could follow with any confidence into the field of demonstrable history. It is still a doubt how far we exchange myths for assured records, when we enter upon the problems of pre-Columbian explorations, which it is the object of the present chapter to discuss. We are to deal with supposable colonizations, from which the indigenous population of America, as the Spaniards found it, was sprung, wholly or in part; and we are to follow the venturesome habits of navigators, who sought experience and commerce in a strange country, and only incidentally left possible traces of their blood in the peoples they surprised. If Spain, Italy, and England gained consequence by the discoveries of Columbus and Cabot, there were other national prides to be gratified by the priority which the Basques, the Normans, the Welsh, the Irish, and the Scandinavians, to say nothing of Asiatic peoples, claimed as their share in the gift of a new world to the old. The records which these peoples present as evidences of their right to be considered the forerunners of the Spanish and English expeditions have in every case been questioned by those who are destitute of the sympathetic credence of a common kinship. The claims which Columbus and Cabot fastened upon Spain and England, to the disadvantage of Italy, who gave to those rival countries their maritime leaders, were only too readily rejected by Italy herself, when the opportunity was given to her of paling such borrowed glories before the trust which she placed in the stories of the Zeni brothers.

There is not a race of eastern Asia — Siberian, Tartar, Chinese, Japanese, Malay, with the Polynesians — which has not been claimed as discoverers, intending or accidental, of American shores, or as progenitors, more or less perfect or remote, of American peoples; and there is no good reason why any one of them may not have done all that is claimed. The historical evidence, however, is not such as is based on documentary proofs of indisputable character, and the recitals advanced are often far from precise enough to be convincing in details, if their general authenticity is allowed.

Nevertheless, it is much more than barely probable that the ice of Behring Straits or the line of the Aleutian Islands was the pathway of successive immigrations, on occasions perhaps far apart, or may be near together; and there is hardly a stronger demonstration of such a connection between the two continents than the physical resemblances of the peoples now living on opposite sides of the Pacific Ocean in these upper latitudes, with the similarity of the flora which environs them on either shore.[1] It is quite as conceivable that the great northern current, setting east athwart the Pacific, should from time to time have carried along disabled vessels, and stranded them on the shores of California and farther north, leading to the infusion of Asiatic blood among whatever there may have been antecedent or autochthonous in the coast peoples. It is certainly in this way possible that the Chinese or Japanese may have helped populate the western slopes of the American continent. There is no improbability even in the Malays of southeastern Asia extending step by step to the Polynesian islands, and among them and beyond them, till the shores of a new world finally received the impress of their footsteps and of their ethnic characteristics. We may very likely recognize not proofs, but indications, along the shores of South America, that its original people constituted such a stock, or were increased by it.

As respects the possible early connections of America on the side of Europe, there is an equally extensive array of claims, and they have been set forth, first and last, with more persistency than effect.[2]

Leaving the old world by the northern passage, Iceland lies at the threshold of America. It is nearer to Greenland than to Norway, and Greenland is but one of the large islands into which the arctic currents divide the North American continent. Thither, to Iceland, if we identify the localities in Geoffrey of Monmouth, King Arthur sailed as early as the beginning of the sixth century, and overcame whatever inhabitants he may have found there. Here too an occasional wandering pirate or adventurous Dane had glimpsed the coast.[3] Thither, among others, came the Irish, and in the ninth century we find Irish monks and a small colony of their countrymen in possession.[4] Thither the Gulf Stream carries the southern driftwood, suggesting sunnier lands to whatever race had been allured or driven to its shelter.[1] Here Columbus, when, as he tells us,[2] he visited the island in 1477, found no ice. So that, if we may place reliance on the appreciable change of climate by the precession of the equinoxes, a thousand years ago and more, when the Norwegians crossed from Scandinavia and found these Christian Irish there,[3] the island was not the forbidding spot that it seems with the lapse of centuries to be becoming.

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[1] Asa Gray, in *Darwiniana*, p. 203. Cf. his *Address* before Amer. Assoc. Adv. Science, 1827.

[2] The subject of these pre-Columbian claims is examined in almost all the general works on early discovery. Cf. Robertson's *America;* J. S. Vater's *Untersuchungen über Amerikas Bevölkerung aus dem alten Continent* (Leipzig, 1810); Dr. F. X. A. Deuber's *Geschichte der Schiffahrt im Atlantischen Ozean* (Bamberg, 1814); Ruge, *Geschichte des Zeitalters der Entdeckungen* (ch. 2); Major's *Select Letters of Columbus*, introd.; C. A. A. Zestermann's *Memoir on the Colonization of America in antehistoric times, with critical observations by E. G. Squier* (London, 1851); *Nouvelles Annales des Voyages* (ii. 404); "Les précurseurs de Colomb" in *Études par les Pères de la Compagnie de Jesus* (Leipzig, 1876); Oscar Dunn in *Revue Canadienne*, xii. 57, 194, 305, 871, 909, — not to name numerous other periodical papers. Paul Gaffarel, in his "Les relations entre l'ancien monde et l'Amérique étaient-elles possibles au moyen âge?" (*Soc. Normande de Géog. Bulletin*, 1881, p. 209), thinks that amid the confused traditions there is enough to convince us that we have no right to determine that communication was impossible.

[3] *MSS. de la bibliothèque royale* (Paris, 1787), i. 462.

[4] De Costa in *Journal Amer. Geog. Soc.* xii. (1880) p. 159, etc., with references.

It was in A. D. 875 that Ingolf, a jarl[4] of Norway, came to Iceland with Norse settlers. They built their habitation at first where a pleasant headland seemed attractive, the present Ingolfshofdi, and later founded Reikjavik, where the signs had directed them; for certain carved posts, which they had thrown overboard as they approached the island, were found to have drifted to that spot. The Christian Irish preferred to leave their asylum rather than consort with the new-comers, and so the island was left to be occupied by successive immigrations of the Norse, which their king could not prevent. In the end, and within half a century, a hardy little republic — as for a while it was — of near seventy thousand inhabitants was established almost under the arctic circle. The very next year (A. D. 876) after Ingolf had come to Iceland, a sea-rover, Gunnbiorn, driven in his ship westerly, sighted a strange land, and the report that he made was not forgotten.[5] Fifty years later, more or less, for we must treat the dates of the Icelandic sagas with some reservation, we learn that a wind-tossed vessel was thrown upon a coast far away, which was called Ireland the Great. Then again we read of a young Norwegian, Eric the Red, not apparently averse to a brawl, who killed his man in Norway and fled to Iceland, where he kept his dubious character; and again outraging the laws, he was sent into temporary banishment, — this time in a ship which he fitted out for discovery; and so he sailed away in the direction of Gunnbiorn's land, and found it. He whiled away three years on its coast, and as soon as he was allowed ventured back with the tidings, while, to propitiate intending settlers, he said he had been to Greenland, and so the land got a sunny name. The next year, which seems to have been A. D. 985, he started on his return with thirty-five ships, but only fourteen of them reached the land. Wherever there was a habitable fiord, a settlement grew up, and the stream of immigrants was for a while constant and considerable. Just at the end of the century (A. D. 999), Leif, a son of Eric, sailed back to Norway, and found the country in the early fervor of a new religion; for King Olaf Tryggvesson had embraced Christianity, and was imposing it on his people. Leif accepted the new faith, and a priest was assigned to him to take back to Greenland; and thus Christianity was introduced into arctic

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[1] Humboldt, *Views of Nature*, p. 124. He also notes the drifting of Eskimo boats to Europe.

[2] *Tratado de las cinco zonas habitables.*

[3] Respecting these Christian Irish see the supplemental chapters of Mallet's *Northern Antiquities* (London, 1847); Dasent's *Burnt Njal*, i. p. vii.; Moore's *History of Ireland;* Forster's *Northern Voyages;* Worsaae's *Danes and Norwegians in England*, 332. Cf. on the contact of the two races H. H. Howorth on "The Irish monks and the Norsemen" in the *Roy. Hist. Soc. Trans.* viii. 281.

[4] Conybeare remarks that jarl, naturalized in England as earl, has been displaced in its native north by graf.

[5] It has sometimes been contended that a bull of Gregory IV, in A. D. 770, referred to Greenland, but Spitzbergen was more likely intended, though its known discovery is much later. A bull of A. D. 835, in Pontanus's *Rerum Daniarum Historia*, is also held to indicate that there were earlier peoples in Greenland than those from Iceland. Sabin (vi. no. 22,854) gives as published at Godthaab, 1859–61, in 3 vols., the Eskimo text of Greenland Folk Lore, collected and edited by natives of Greenland, with a Danish translation, and showing, as the notice says, the traditions of the first descent of the Northmen in the *eighth* century.

NORSE SHIP.*

* This cut is copied from one in Nordenskiöld's *Voyage of the Vega* (London, 1881), vol. i. p. 50, where it is given as representing the vessel found at Sandefjord in 1880. It is drawn from the restoration given in *The Viking ship discovered at Gokstad in Norway* (*Langskibet fra Gokstad ved Sandefjord*) *described by N. Nicholaysen* (Christiania, 1882). The original vessel owed its preservation to being used as a receptacle for the body of a Viking chief, when he was buried under a mound. When exhumed, its form, with the sepulchral chamber midships, could be made out, excepting that the prow and stern in their extremities had to be restored. In the ship and about it were found, beside some of the bones of a man, various appurtenances of the vessel, and the remains of horses buried with him. They are all described in the book above cited, from which the other cuts herewith given of the plan of the vessel and one of its rowlocks are taken. The *Popular Science Monthly*, May, 1881, borrowing from *La Nature*, gives a view of the ship as when found *in situ*. There are other accounts in *The Antiquary*, Aug., 1880; Dec., 1881; 1882, p. 87; *Scribner's Magazine*, Nov., 1887, by John S. White; *Potter's American Monthly*, Mar., 1882. Cf. the illustrated paper, "Les navires des peuples du nord," by Otto Jorell, in *Congrès Internat. des Sciences géographiques* (Paris, 1875; pub. 1878), i. 318.

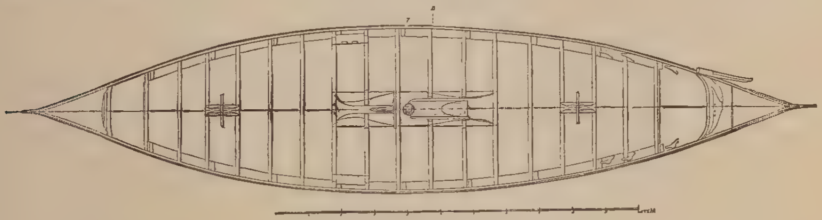
Of an earlier discovery in 1872 there is an account in *The ancient vessel found in the parish of Tune, Norway* (Christiania, 1872). This is a translation by Mr. Gerhard Gadé of a Report in the Proceedings of the Society for preserving Norwegian Antiquities. (Cf. *Mass. Hist. Soc. Proc.*, xiii. p. 10.) This vessel was also buried under a mound, and she was 43½ feet long and four feet deep.

There is in the Nicholaysen volume a detailed account of the naval architecture of the Viking period, and other references may be made to Otto Jorell's *Les navires des peuples du Nord*, in the *Congrès internat. des sciences géog., compte rendu, 1875* (1878, i. 318); *Mémoires de la Soc. royal des Antiquaires du Nord* (1887, p. 280); Preble, in *United Service* (May, 1883, p. 463), and in his *Amer. Flag*, p. 159; De Costa's *Pre-Columbian Discovery of America*, p. xxxvii; Fox's *Landfall of Columbus*, p. 3; *Pop. Science Monthly*, xix. 80; *Van Nostrand's Eclectic Engineering Mag.*, xxiii. 320; *Good Words*, xxii. 759; Higginson's *Larger History U. S.* for cuts; and J. J. A. Worsaae's *Prehistory of the North* (Eng. transl., London, 1886) for the burial in ships.

There is a paper on the daring of the Norsemen as navigators by G. Brynjalfson (*Compte Rendu*, *Congrès des Américanistes*, Copenhagen, p. 140), entitled "Jusqu'où les anciens Scandinaves ont-ils pénétré vers le pôle arctique dans leurs expéditions à la mer glaciale?"

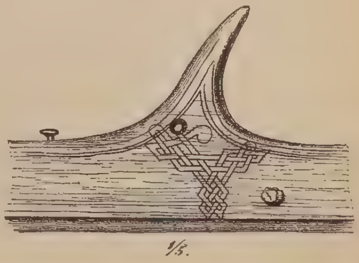
America. So they began to build churches[1] in Greenland, the considerable ruins of one of which stand to this day.[2] The winning of Iceland to the Church was accomplished at the same time.

There were two centres of settlement on the Greenland coast, not where they were long suspected to be, on the coast opposite Iceland, nor as supposed after the explorations of Baffin's Bay, on both the east and west side of the country; but the settlers seem to have reached and doubled Cape Farewell, and so formed what was called their eastern settlement (Eystribygd), near the cape, while farther to the north they formed their western colony (Westribygd).[3] Their relative positions are still involved in doubt.



PLAN OF VIKING SHIP.

In the next year after the second voyage of Eric the Red, one of the ships which were sailing from Iceland to the new settlement, was driven far off her course, according to the sagas, and Bjarni Herjulfson, who commanded the vessel, reported that he had come upon a land, away to the southwest, where the coast country was level; and he added that when he turned north it took him nine days to reach Greenland.[4] Fourteen years later than this voyage of Bjarni, which is said to have been in A. D. 986, — that is, in the year 1000 or thereabouts, — Leif, the same who had brought the Christian priest to Greenland, taking with him thirty-five companions, sailed from Greenland in quest of the land seen by Bjarni, which Leif first found, where a barren shore stretched back to ice-covered mountains, and because of the stones there he called the region Helluland. Proceeding farther south, he found a sandy shore, with a level forest-country back of it, and because of the woods it was named Markland. Two days later they came upon other land, and tasting the dew upon the grass they found



ROWLOCK OF THE VIKING SHIP.

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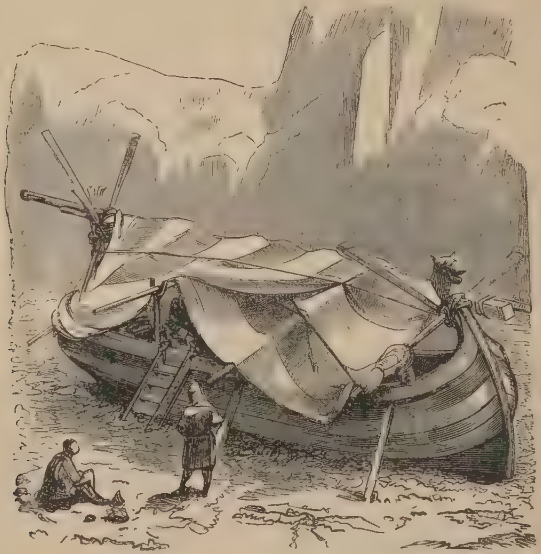
[1] Known as the Katortuk church.

[2] An apocryphal story goes that one of these churches was built near a boiling spring, the water from which was conducted through the building in pipes for heating it! The Zeno narrative is the authority for this. Cf. Gay's *Pop. Hist. U. S.* i. 79.

[3] The Westribygd, or western colony, had in the fourteenth century 90 settlements and 4 churches; the Eystribygd had 190 settlements, a cathedral and eleven churches, with two large towns and three or four monasteries.

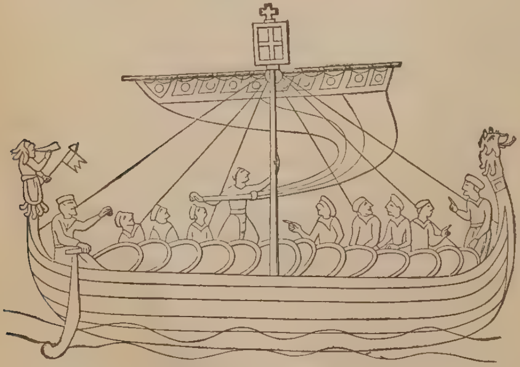
[4] R. G. Haliburton, in the *Popular Science Monthly*, May, 1885, p. 40, gives a map in which Bjarni's course is marked as entering the St. Lawrence Gulf by the south, and emerging by the Straits of Belle Isle.

it sweet. Farther south and westerly they went, and going up a river came into an expanse of water, where on the shores they built huts to lodge in

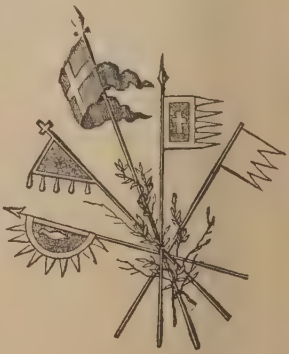


NORSE BOAT USED AS A HABITATION.*

for the winter, and sent out exploring parties. In one of these, Tyrker, a native of a part of Europe where grapes grew, found vines hung with their fruit, which induced Leif to call the country Vinland.



NORMAN SHIP FROM THE BAYEUX TAPESTRY.†



SCANDINAVIAN FLAGS.‡

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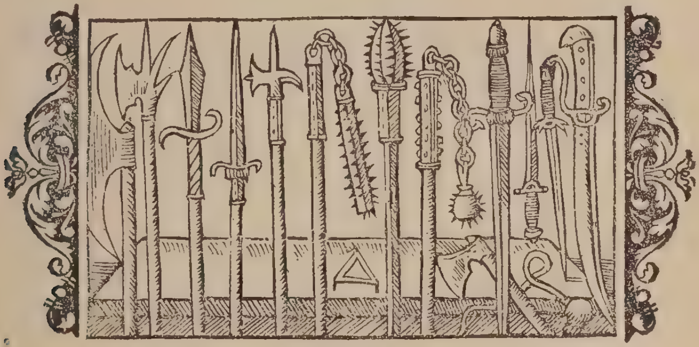
* From Viollet-le-Duc's *Habitation humaine* (Paris, 1875).

† From Worsaae's *Danes and Norwegians in England*, etc. "With the exception of very imperfect representation carved on rocks and runic stones [see Higginson's *Larger History*, p. 27], there are no images left in the countries of Scandinavia of ships of the olden times; but the tapestry at Bayeux, in Normandy, is a contemporary evidence of the appearance of the Normanic ships."

‡ This group from Worsaae's *Danes and Norwegians in England, etc.*, p. 64, shows the transition from the raven to the cross.

Attempts have been made to identify these various regions by the inexact ccounts of the direction of their sailing, by the very general descriptions f the country, by the number of days occupied in going from one point to nother, with the uncertainty if the ship sailed at night, and by the length f the shortest day in Vinland, — the last a statement that might help us, it could be interpreted with a reasonable concurrence of opinion, and if it ere not confused with other inexplicable statements. The next year Leif's rother, Thorvald, went to Vinland with a single ship, and passed three win-ers there, making explorations meanwhile, south and north. Thorfinn Karl-efne, arriving in Greenland in A. D. 1006, married a courageous widow amed Gudrid, who induced him to sail with his ships to Vinland and make here a permanent settlement, taking with him livestock and other neces-aries for colonization. Their first winter in the place was a severe one; but



FROM OLAUS MAGNUS.*

udrid gave birth to a son, Snorre, from whom it is claimed Thorwaldsen, he Danish sculptor, was descended. The next season they removed to the pot where Leif had wintered, and called the bay Hóp. Having spent a hird winter in the country, Karlsefne, with a part of the colony, returned o Greenland.

The saga then goes on to say that trading voyages to the settlement hich had been formed by Karlsefne now became frequent, and that the hief lading of the return voyages was timber, which was much needed in reenland. A bishop of Greenland, Eric Upsi, is also said to have gone to inland in A. D. 1121. In 1347 the last ship of which we have any record n these sagas went to Vinland after timber. After this all is oblivion.

There are in all these narratives many details beyond this outline, and hose who have sought to identify localities have made the most they could f the mention of a rock here or a bluff there, of an island where they illed a bear, of others where they found eggs, of a headland where they uried a leader who had been killed, of a cape shaped like a keel, of broad-faced natives who offered furs for red cloths, of beaches where they haule up their ships, and of tides that were strong; but the more these detail are scanned in the different sagas the more they confuse the investigator and the more successive relators try to enlighten us the more our doubt are strengthened, till we end with the conviction that all attempts at con sistent unravelment leave nothing but a vague sense of something some where done.

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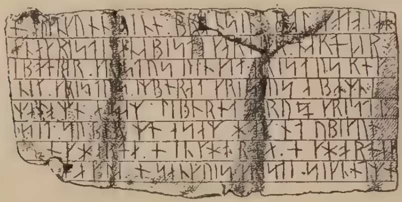
* Fac-simile of Norse weapons from the *Historia* of Olaus Magnus (b. 1490; d. 1568), Rome, 1555, p. 222.

Everywhere else where the Northmen went they left proofs of their occu

FULL-SIZE FACSIMILE OF THE TABLET, *engraved by Prof. Magnus Petersen, with the Runes as he sees them.*



(TRANSLITERATION OF THE LEADEN TABLET.)

+ (AT) Þ(E)R KUEN(E) SINE PRINSINED (B)AD (M)OTO LAN-
ANA KRISTI DONAVISTI GARDIAR IARDIAR
IBODIAR KRISTUS UINKIT KRISTUS REG-
NAT KRISTUS IMPERAT KRISTUS AB OMNI
MALO ME ASAM LIPERET KRUX KRISTI
SIT SUPER ME ASAM HIK ET UBIQUE
+ KHORDA + IN KHORDA + KHORDAE
(t) (M)AGLA + SANGUIS KRISTI SIGNET ME

RUNES, A. D. 1000.*

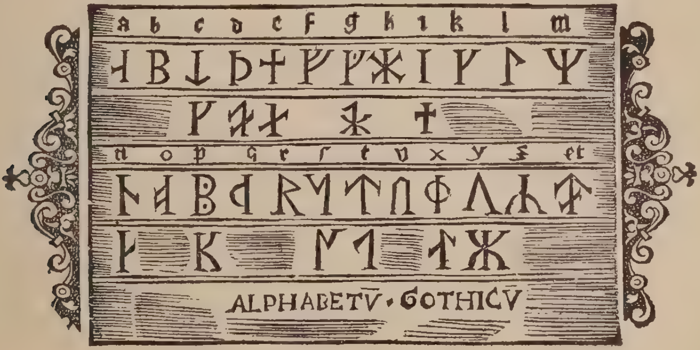
* This cut is of some of the oldest runes known, giving two lines in Danish and the rest in Latin, as t transliteration shows. It is copied from *The oldest yet found Document in Danish, by Prof. Dr. George S phens* (Copenhagen, 1888,—from the *Mémoires des Antiquaires du Nord*, 1887). The author says that t leaden tablet on which the runes were cut was found in Odense, Fyn, Denmark, in 1883, and he places t date of it about the year A. D. 1000.

George Stephens's *Handbook of the old Northern Runic Monuments of Scandinavia and England* is condensation, preserving all the cuts, and making some additions to his larger folio work in 3 vols., *T old-northern Runic monuments of Scandinavia and England, now first collected and deciphered* (Lond etc., 1866–68). It does not contain either Icelandic or Greenland runes. He says that by the time of the c onization of Iceland "the old northern runes as a system had died out on the Scandinavian main, and we followed by the later runic alphabet. But even this modern Icelandic of the tenth century has not co down to us. If it had, it would be very different from what is now vulgarly so called, which is the grea altered Icelandic of the thirteenth and fourteenth centuries. . . . The oldest written Icelandic known to us said to date from about the year 1200. . . . The whole modern doctrine of one uniform Icelandic langua all over the immense north in the first one thousand winters after Christ is an impossible absurdity. . . . It very seldom that any of the Scandinavian runic stones bear a date. . . . No Christian runic gravestone older than the fourteenth century."

On runes in general, see Mallet, Bohn's ed., pp. 227, 248, following the cut of the Kingektorsoak stone, Rafn's *Antiq. Americanæ;* Wilson's *Prehist. Man*, ii. 88; Wollheim's *Nat. Lit. der Scandinavier* (B lin, 1875), vol. i. pp. 2–15; Legis-Glueckselig's *Die Runen und ihre Denkmäler* (Leipzig, 1829); De Cost *Pre-Columb. Disc.*, pp. xxx; *Revue polit. et lit.*, Jan. 10, 1880.

It is held that runes are an outgrowth of the Latin alphabet. (L. F. A. Wimmer's *Runeskriftens Opr delse og Udvikling i norden*, Copenhagen, 1874.)

pation on the soil, but nowhere in America, except on an island on the east shore of Baffin's Bay,[1] has any authentic runic inscription been found outside of Greenland. Not a single indisputable grave has been discovered to attest their alleged centuries of fitful occupation. The consistent and natural proof of any occupation of America south of Davis Straits is therefore lacking; and there is not sufficient particularity in the descriptions[2] to remove the suspicion that the story-telling of the fireside has overlaid the reports of the explorer. Our historic sense is accordingly left to consider, as respects the most general interpretation, what weight of confidence should be yielded to the sagas, pre-Columbian as they doubtless are. But beyond this is perhaps, what is after all the most satisfactory way of solving the problem, a dependence on the geographical and ethnical probabilities of the case. The Norsemen have passed into credible history as the most hardy and venturesome of races. That they colonized Iceland and Greenland is indisputable. That their eager and daring nature should have deserted them at this point is hardly conceivable. Skirting the Greenland shores and inuring themselves to the hardships and excitements of northern voyaging, there was not a long stretch of open sea before they could strike the Labrador coast. It was a voyage for which their ships, with courageous crews, were not unfitted. Nothing is more likely than that some ship of theirs may have been blown westerly and unwillingly in the first instance, just as Greenland was in like manner first made known to the Icelanders. The coast once found, to follow it to the south would have been their most consistent action.


a b c d e f g h i k l m
n o p q r s t v x y z et
ALPHABETV · GOTHICV

FROM OLAUS MAGNUS.*

We may consider, then, that the weight of probability[3] is in favor of a Northman descent upon the coast of the American mainland at some point, or at several, somewhere to the south of Greenland; but the evidence is hardly that which attaches to well-established historical records.

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[1] Dated 1135, and discovered in 1824.

[2] Distinctly shown in the diverse identifications of these landmarks which have been made.

[3] On the probabilities of the Vinland voyages, see Worsaae's *Danes and Norwegians in England*, etc., p. 109.

* Fac-simile of a cut to the chapter "De Alphabeto Gothorum" in the *Historia de Gentibus Septentrionalibus* (Romæ, M.D.LV.).

The archæological traces, which are lacking farther south, are abundant in Greenland, and confirm in the most positive way the Norse occupation. The ruins of churches and baptisteries give a color of truth to the ecclesiastical annals which have come down to us, and which indicate that after having been for more than a century under the Bishop of Iceland, a succession of bishops of its own was established there early in the twelfth century. The names of seventeen prelates are given by Torfæus, though it is not quite certain that the bishops invariably visited their see. The last known to have filled the office went thither in the early years of the fifteenth century. The last trace of him is in the celebration of a marriage at Gardar in 1409.

The Greenland colonists were equipped with all the necessities of a permanent life. They had horses, sheep, and oxen, and beef is said to have been a regular article of export to Norway. They had buildings of stone, of which the remains still exist. They doubtless brought timber from the south, and we have in runic records evidence of their explorations far to the north. They maintained as late as the thirteenth century a regular commercial intercourse with the mother country,[1] but this trade fell into disuse when a royal mandate constituted such ventures a monopoly of the throne; and probably nothing so much conduced to the decadence and final extinction of the colonies as this usurped and exclusive trade, which cut off all personal or conjoined intercourse.

The direct cause of the final extinction of the Greenland colonies is involved in obscurity, though a variety of causes, easily presumable, would have been sufficient, when we take into consideration the moribund condition into which they naturally fell after commercial restriction had put a stop to free intercourse with the home government.

The Eskimos are said to have appeared in Greenland about the middle of the fourteenth century, and to have manifested hostility to such a degree that about 1342 the imperilled western colony was abandoned. The eastern colony survived perhaps seventy years longer, or possibly to a still later period. We know they had a new bishop in 1387, but before the end of that century the voyages to their relief were conducted only after long intervals.

Before communication was wholly cut off, the attacks of the Skrælings, and possibly famine and the black death, had carried the struggling colonists to the verge of destruction. Bergen, in Norway, upon which they depended for succor, had at one time been almost depopulated by the same virulent disease, and again had been ravaged by a Hanseatic fleet. Thus such intercourse as the royal monopoly permitted had become precarious, and the marauding of freebooters, then prevalent in northern waters, still further served to impede the communications, till at last they wholly ceased, during the early years of the fifteenth century.

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[1] *Grönland's Hist. Mindesmaeker*, iii. 9.

It has sometimes been maintained that the closing in of ice-packs was the final stroke which extinguished the last hopes of the expiring colonists.[1] This view, however, meets with little favor among the more enlightened students of climatic changes, like Humboldt.[2]

There has been published what purports to be a bull of Pope Nicholas V,[3] directing the Bishop of Iceland to learn what he could of the condition of the Greenland colonies, and in this document it is stated that part of the colonists had been destroyed by barbarians thirty years before, — the bull bearing date in 1448. There is no record that any expedition followed upon this urging, and there is some question as to the authenticity of the document.[4] In the *Relation* of La Peyrère there is a story of some sailors visiting Greenland so late as 1484; but it is open to question.

Early in the sixteenth century fitful efforts to learn the fate of the colonies began, and these were continued, without result, well into the seventeenth century; but nothing explicable was ascertained till, in 1721, Hans Egede, a Norwegian priest, prevailed upon the Danish government to send him on a mission to the Eskimos. He went, accompanied by wife and children; and the colony of Godthaab, and the later history of the missions, and the revival of trade with Europe, attest the constancy of his purpose and the fruits of his earnestness. In a year he began to report upon certain remains which indicated the former occupation of the country by people who built such buildings as was the habit in Europe. He and his son Paul Egede, and their successors in the missions, gathered for us, first among modern searchers, the threads of the history of this former people; and as time went on, the researches of Graah, Nordenskjöld, and other explorers, and the studious habits of Major, Rink, and the rest among the investigators, have enabled us to read the old sagas of the colonization o Greenland with renewed interest and with the light of corroborating evidence.[1]

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[1] The popular confidence in this view is doubtess helped by Montgomery, who has made it a point in his poem on Greenland, canto v. De Courcy (*Hist. of the Church in America*, p. 12) s cited by Howley (*Newfoundland*) as assertng that the eastern colony was destroyed by 'a physical cataclysm, which accumulated the ce." On the question of a change of climate in Greenland, see J. D. Whitney's *Climatic Changes* (*Mus. Comp. Zoöl. Mem.*, 1882, vii. 238).

[2] Rink (*Danish Greenland*, 22) is not inclined to believe that there has been any material climatic change in Greenland since the Norse days, and favors the supposition that some portion of the finally remaining Norse became amalgamated with the Eskimo and disappeared. If the reader wants circumstantial details of the misfortunes of their "last man," he can see how they can be made out of what are held to be Eskimo traditions in a chapter of Dr. Hayes's *Land of Desolation.*

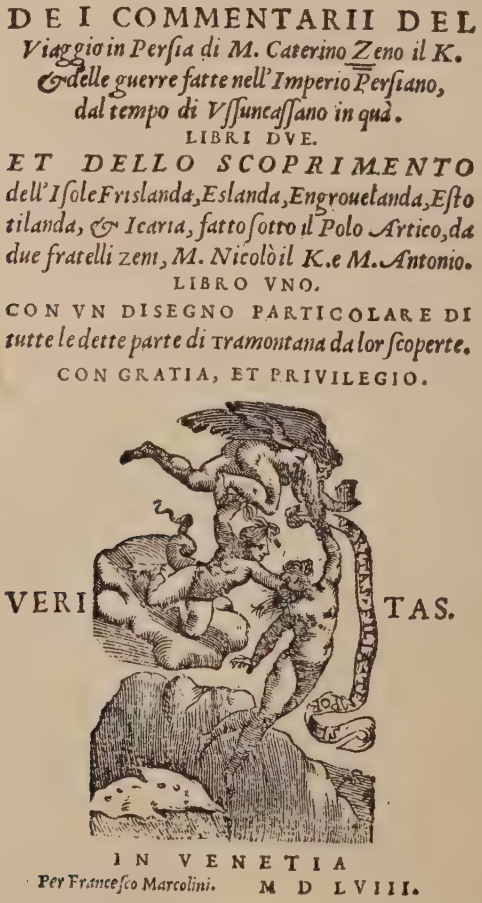
Nordenskjöld (*Voyage of the Vega*) holds, such s the rapid assimilation of a foreign stock by a native stock, that it is not unlikely that what descendants may exist of the lost colonists of Greenland may be now indistinguishable from the Eskimo.

Tylor (*Early Hist. Mankind*, p. 208), speaking of the Eskimo, says: "It is indeed very strange that there should be no traces found among them of knowledge of metal-work and of other arts, which one would expect a race so receptive of foreign knowledge would have got from contact with the Northmen."

Prof. Edward S. Morse, in his very curious study of *Ancient and Modern Methods of Arrow Release* (Salem, 1885, — *Bull. Essex Inst.*, xvii.) p. 52, notes that the Eskimo are the only North American tribe practising what he calls the "Mediterranean release," common to all civilized Europe, and he ventures to accept a surmise that it may have been derived from the Scandinavians.

[3] Given by Schlegel, Egede (citing Pontanus), and Rafn; and a French version is in the *Bull. de la Soc. de Géog.*, 2d series, iii. 348. It is said to be preserved in a copy in the Vatican. M. F. Howley, *Ecclesiastical Hist. of Newfoundland* (Boston, 1888), p. 43, however, says: "Abbé Garnier mentions a bull of Pope Nicholas V, of date about 1447, concerning the church of Greenland; but on searching the Bullarium in the Propaganda library, Rome, in 1885, I could not find it."

[4] Laing's *Heimskringla*, i. 146.



DE I COMMENTARII DEL
Viaggio in Perſia di M. Caterino Zeno il K.
& delle guerre fatte nell'Imperio Perſiano,
dal tempo di Vſſuncaſſano in quà.
LIBRI DVE.
ET DELLO SCOPRIMENTO
dell'Iſole Frislanda, Eslanda, Engroueland, Eſto
tilanda, & Icaria, fatto ſotto il Polo Artico, da
due fratelli Zeni, M. Nicolò il K. e M. Antonio.
LIBRO VNO.
CON VN DISEGNO PARTICOLARE DI
tutte le dette parte di Tramontana da lor ſcoperte.
CON GRATIA, ET PRIVILEGIO.

VERITAS.

IN VENETIA
Per Franceſco Marcolini. M D LVIII.

We are told that it was one result of these Northman voyages that the fame of them spread to other countries, and became known among the Welsh, at a time when, upon the death of Owen Gwynedd, who ruled in the northern parts of that country, the people were embroiled in civil strife. That chieftain's son, Prince Madoc, a man bred to the sea, was discontented with the unstable state of society, and resolved to lead a colony to these western lands, where they could live more in peace. Accordingly, in A. D. 1170, going seaward on a preliminary exploration by the south of Ireland, he steered west, and established a pioneer colony in a fertile land. Leaving here 120 persons, he returned to Wales, and fitted out a larger expedition of ten ships, with which he again sailed, and passed out of view forever. The evidence in support of this story is that it is mentioned in early

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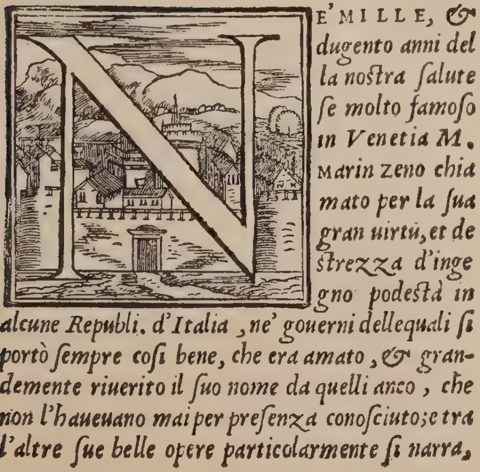
[1] E. B. Tylor on "Old Scandinavian Civilization among the modern Esquimaux," in the *Journal of the Anthropological Inst.* (1884), xiii. 348, shows that the Greenlanders still preserve some of the Norse customs, arising in part, as he thinks, from some of the lost Scandinavian survivors being merged in the savage tribes. Their recollection of the Northmen seems evident from the traditions collected among them by Dr. Rink in his *Eskimoiske Eventyr og Sag* (Copenhagen, 1866); and their dress, and some of their utensils and games, as it existed in the days of Egede and Crantz, seem to indicate the survival of customs.

DELLO SCOPRIMENTO DEL
l'Iſole Frislanda, Eslanda, Engroueland Eſtotilanda, & Icaria, fatto per due fratelli Zeni M. Nicolò il Caualiere, &
M. Antonio Libro Vno, col diſegno di dètte Iſole.



NE' MILLE, & *dugento anni della noſtra ſalute ſe molto famoſo in Venetia M. Marin zeno chiamato per la ſua gran uirtù, et deſtrezza d'ingegno podeſtà in alcune Republi. d'Italia, ne' gouerni dellequali ſi portò ſempre coſi bene, che era amato, & grandemente riuerito il ſuo nome da quelli anco, che non l'haueuano mai per preſenza conoſciuto; e tra l'altre ſue belle opere particolarmente ſi narra,*

NOTE. — The cuts above are fac-similes of the title and of the first page of the section on Frisland, etc., from the Harvard College copy. The book is rare. The Beckford copy brought £50; the Hamilton, £38; the Tross catalogue (1882) price one at 150 francs; the Tweitmeyer, Leipzig, 1888, at 250 marks; Quaritch (1885), at £25. Cf. Court Catalogue, no. 378; Leclerc, no. 3002; Dufossé, no. 4965; Carter-Brown, i. 226; Murphy, nos. 2798-99. The map is often in fac-simile, as in the Harvard College copy.

Welsh annals, and that sundry persons have discovered traces of the Welsh tongue among the lighter-colored American Indians, to say nothing of manifold legends among the Indians of an original people, white in color, coming from afar towards the northeast, — proofs not sufficient to attract the confidence of those who look for historical tests, though, as Humboldt contends,[1] there may be no impossibility in the story.

There seems to be a general agreement that a crew of Arabs, somewhere about the eleventh or twelfth century, explored the Atlantic westward, with the adventurous purpose of finding its further limits, and that they reached land, which may have been the Canaries, or possibly the Azores, though the theory that they succeeded in reaching America is not without advocates. The main source of the belief is the historical treatise of the Arab geographer Edrisi, whose work was composed about the middle of the twelfth century.[2]

In the latter part of the fourteenth century,[3] as the story goes, two brothers of Venice, Nicolo and Antonio Zeno, being on a voyage in the North Atlantic were wrecked there, and lived for some years at Frislanda, and visited Engroneland. During this northern sojourn they encountered a sailor, who, after twenty-six years of absence, had returned, and reported that the ship in which he was had been driven west in a gale to an island, where he found civilized people, who possessed books in Latin and could not speak Norse, and whose country was called Estotiland; while a region on the mainland, farther south, to which he had also gone, was called Drogeo, and that here he had encountered cannibals. Still farther south was a great country with towns and temples. This information, picked up by these exiled Zeni, was finally conveyed to another brother in Venice, accompanied by a map of these distant regions. These documents long remained in the family palace in Venice, and were finally neglected and became obscured, until at last a descendant of the family compiled from them, as best he could, a book, which was printed in Venice in 1558 as *Dei Commentarii del Viaggio*, which was accompanied by a map drawn with difficulty from the half obliterated original which had been sent from Frislanda.[1] The original documents were never produced, and the publication took place opportunely to satisfy current curiosity, continually incited

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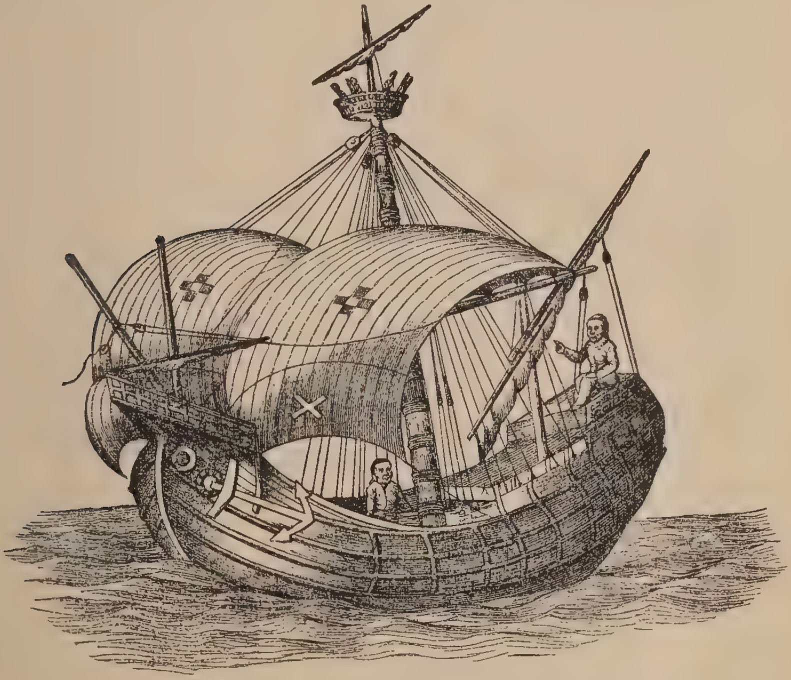
[1] *Cosmos*, Bohn's ed., ii. 610; *Examen Crit.*, ii. 148.

[2] Cf. *Geographie de Edrisi, traduite de l'arabe en français d'après deux manuscrits de la bibliothèque du Roi, et accompagnée de notes, par G. Amédée Jaubert* (Paris, 1836–40), vol. i. 200; ii. 26. Cf. *Recueil des Voyages et Mémoires de la Société de Géographie de Paris*, vols. v., vi. The world-map by Edrisi does not indicate any knowledge of this unknown world. Cf. copies of it in St. Martin's *Atlas*, pl. vi; Lelewel, *Atlas*, pl. x–xii; Peschel's *Gesch. der Erdkunde*, ed. by Ruge, 1877, p. 144; *Amer. Geog. Soc. Journal*, xii. 181; *Allg. Geog. Ephemeriden*, ix. 292; Gerard Stein's *Die Entdeckungsreisen in alter und neuer Zeit* (1883).

Guignes (*Mém. Acad. des Inscriptions*, 1761, xxviii. 524) limits the Arab voyage to the Canaries, and in *Notices et Extraits des MSS. de la bibliothèque du Roi*, ii. 24, he describes a MS. which makes him believe the Arabs reached America; and he is followed by Munoz (*Hist. del Nuevo Mondo*, Madrid, 1793). Hugh Murray (*Discoveries and Travels in No. Amer.*, Lond., 1829, i. p. 11) and W. D. Cooley (*Maritime Discovery*, 1830, i. 172) limit the explorations respectively to the Azores and the Canaries. Humboldt (*Examen Crit.*, 1837, ii. 137) thinks they may possibly have reached the Canaries; but Malte Brun (*Géog. Universelle*, 1841, i. 186) is more positive. Major (*Select Letters of Columbus*, 1847) discredits the American theory, and in his *Prince Henry* agrees with D'Avezac that they reached Madeira. Lelewel (*Géog. du Moyen Age*, ii. 78) seems likewise incredulous. S. F. Haven (*Archæol. U. S.*) gives the theory and enumerates some of its supporters. Peschel (*Geschichte des Zeitalters der Entdeckungen*, 1858) is very sceptical. Gaffarel (*Etudes*, etc., p. 209) fails to find proof of the American theory. Gay (*Pop. History U. S.*, i. 64) limits their voyage to the Azores.

[3] Given as A. D. 1380; but Major says, 1390. *Journal Royal Geog. Soc.*, 1873, p. 180.



SHIP OF THE FIFTEENTH CENTURY.*

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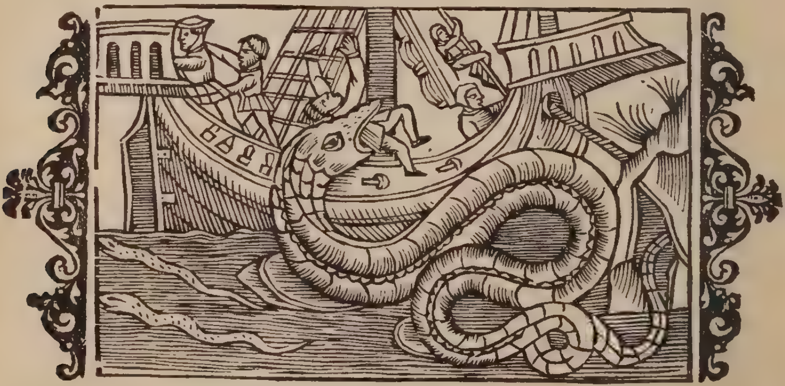
[1] De Costa, *Verrazano the Explorer* (N. Y., 880), pp. 47, 63, contends that Benedetto Bor-lone, writing his *Isole del Mondo* in 1521, and printing it in 1528, had access to the Zeno map hirty years and more earlier than its publica-ion. This, he thinks, is evident from the way n which he made and filled in his outline, and from his drawing of "Islanda," even to a like way of engraving the name, which is in a style of etter used by Bordone nowhere else. Humboldt (*Cosmos*, Bohn's ed., ii. 611) has also remarked it as singular that the name Frislanda, which, as he supposed, was not known on the maps before the Zeni publication in 1538, should have been applied by Columbus to an island southerly from Iceland, in his *Tratado de las cinco zonas habitables.* Cf. De Costa's *Columbus and the Geographers of the North* (1872), p. 19. Of course, Columbus might have used the name simply descriptively, — cold land; but it is now known that in a sea chart of perhaps the fifteenth century, preserved in the Ambrosian library at Milan, the name "Fixlanda" is applied to an island in the position of Frislanda in the Zeno chart, while in a Catalan chart of the end of the fifteenth century the same island is apparently called "Frixlanda" (*Studi biog. e bibliog. della soc. geog. ital.*, ii. nos. 400, 404). "Frixanda" is also on a chart, A. D. 1471–83, given in facsimile to accompany Wuttke's "Geschichte der Erdkunde" in the *Jahrbuch des Vereins für Erdkunde* (Dresden, 1870, tab. vi.).

* From the *Isolario* (Venice, 1547).

by the Spanish discoveries. It was also calculated to appeal to the national pride of Italy, which had seen Spain gain the glory of her own sons, Columbus and Vespucius, if it could be established that these distant regions, of which the Zeni brothers so early reported tidings, were really the great new world.[1] The cartography of the sixteenth century shows that the narrative and its accompanying map made an impression on the public mind, but from that day to this it has been apparent that there can be no concurrence of opinion as to what island the Frislanda of the Zeni was, if it existed at all except in some disordered or audacious mind; and, as a matter of course, the distant regions of Estotiland and Drogeo have been equally the subject of belief and derision. No one can be said wholly to have taken the story out of the category of the uncertain.



THE SEA OF DARKNESS.
(From Olaus Magnus.)

The presence of the Basques on the coasts of North America long before the voyage of Columbus is often asserted,[2] and there is no improbability in a daring race of seamen, in search of whales, finding a way to the American waters. There are some indications in the early cartography which can perhaps be easily explained on this hypothesis;[3] there are said to be unusual linguistic correspondences in the American tongues with those of this strange people.[4] There are the reports of the earliest navigators, who have left indisputable records that earlier visitors from Europe had been before them, and Cabot may have found some reminders of such;[1] and it is even asserted that it was a Basque mariner, who had been on the Newfoundland banks, and gave to Columbus some premonitions of the New World.[2]

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[1] Irving's *Columbus* takes this view.

[2] J. P. Leslie's *Man's Origin and Destiny*, p. 114, for instance.

[3] Brevoort (*Hist. Mag.*, xiii. 45) thinks that the "Isola Verde" and "Isle de Mai" of the fifteenth-century maps, lying in lat. 46° north, was Newfoundland with its adjacent bank, which he finds in one case represented. Samuel Robertson (*Lit. & Hist. Soc. Quebec, Trans.* Jan. 16) goes so far as to say that certain relics found in Canada may be Basque, and that it was a Basque whaler, named Labrador, who gave the name to the coast, which the early Portuguese found attached to it! We find occasional stories indicating knowledge of distant fishing coasts at a very early date, like the following: —

"In the yeere 1153 it is written that there came to Lubec, a citie of Germanie, one canoa with certaine indians, like unto a long barge, which seemed to have come from the coast of Baccalaos, which standeth in the same latitude that Germanie doth" (*Galvano*, Bethune's edition, p. 56).

[4] W. D. Whitney, *Life and Growth of Lan*

Certain claims of the Dutch have also been advanced;[3] and one for an early discovery of Newfoundland, in 1463–64, by John Vas Costa Cortereal was set forth by Barrow in his *Chronological Hist. of Voyages into the Arctic Regions* (London, 1818); but he stands almost alone in his belief.[4] Biddle in his *Cabot* has shown its great improbability.

In the years while Columbus was nourishing his purpose of a western voyage, there were two adventurous navigators, as alleged, who were breasting the dangers of the Sea of Darkness both to the north and to the south. It

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guage, p. 258, says: "No other dialect of the old world so much resembles in structure the American languages." Cf. Farrar's *Families of Speech*, p. 132; Nott and Gliddon's *Indigenous Races*, 48; H. de Charencey's *Des affinités de la langue Basque avec les idiomes du Nouveau Monde* (Paris and Caen, 1867); and Julien Vinson's "La langue basque et les langues Américaines" in the *Compte Rendu, Congrès des Américanistes* (Nancy, 1875), ii. 46. On the other hand, Joly (*Man before Metals*, 316) says: "Whatever may be said to the contrary, Basque offers no analogy with the American dialects."

These linguistic peculiarities enter into all the studies of this remarkable stock. Cf. J. F. Blade's *Etude sur l'origine des Basques* (Paris, 1869); W. B. Dawkins in the *Fortnightly Review*, Sept., 1874, and his *Cave Hunting*, ch. 6, with Brabrook's critique in the *Journal Anthropological Institute*, v. 5; and Julien Vinson on "L'Ethnographie des Basques" in *Mém. de la Soc. d'Ethnographie, Session de 1872*, p. 49, with a map.

[1] But see Vol. III. 45; IV. 3. Forster (*Northern Voyages*, book iii. ch. 3 and 4) contends for these pre-Columbian visits of the European fishermen. Cf. Winsor's *Bibliog. of Ptolemy*, sub anno 1508. The same currents and easterly trade-winds which helped Columbus might easily have carried chance vessels to the American coasts, as we have evidence, apparently, in the stern-post of a European vessel which Columbus saw at Guadaloupe. Haven cites Gumilla (*Hist. Orinoco*, ii. 208) as stating that in 1731 a bateau from Teneriffe was thrown upon the South American coast. Cf. J. P. Casselius, *De Navigationibus fortuitis in Americam, ante Columbum factis* (Magdeburg, 1742); Brasseur's *Popul Vuh*, introd.; Hunt's *Merchants' Mag.* xxv. 275.

[2] Francisque-Michel, *Le Pays Basque*, 189, who says that the Basques were acquainted with the coasts of Newfoundland a century before Columbus (ch. 9).

Humboldt (*Cosmos*, Eng. ed. ii. 142) is not prepared to deny such early visits of the Basques to the northern fishing grounds. Cf. Gaffarel's *Rapport*, p. 212. Harrisse (*Notes on Columbus*, 80) goes back very far: "The Basques and Northmen, we feel confident, visited these shores as early as the seventh century."

There are some recent studies on these early fishing experiences in Ferd. Duro's *Disquisiciones nauticas* (1881), and in E. Gelcich's "Der Fischgang des Gascogner und die Entdeckung von Neufundland," in the *Zeitschrift der Gesellschaft für Erdkunde zu Berlin* (1883), vol. xviii. pp. 249–287.

[3] Cf. M. Hamconius' *Frisia: seu de viris erbusque Frisiæ illustribus* (Franckeræ, 1620), and L. Ph. C. v. d. Bergh's *Nederlands annspraak op de ontdekking van Amerika voor Columbus* (Arnheim, 1850). Cf. Müller's *Catalogue* (1877), nos. 303, 1343.

[4] Watson's bibliog. in Anderson, p. 158.

A Biscayan merchant, a subject of Navarre, is also said to have discovered the western lands in 1444. Cf. André Favyn, *Hist. de Navarre*, p. 564; and G. de Henao's *Averignaciones de las Antigüedades de Cantabria*, p. 25.

Galvano (Hakluyt Soc. ed., p. 72) recounts the story of a Portuguese ship in 1447 being driven westward from the Straits of Gibraltar to an island with seven cities, where they found the people speaking Portuguese; who said they had deserted their country on the death of King Roderigo. "All these reasons seem to agree," adds Galvano, "that this should be that country which is called Nova Spagna."

It was the year (1491) before Columbus' voyage that the English began to send out from Bristol expeditions to discover these islands of the seven cities, and others having the same legendary existence. Cf. Ayala, the Spanish ambassador to England, in *Spanish State Papers*, i. 177. Cf. also Irving's *Columbus*, app. xxiv., and Gaffarel's *Etude sur la rapports*, etc., p. 185.

cannot be said that either the Pole Skolno, in his skirting the Labrador coasts in 1476,[1] or the Norman Cousin, who is thought to have traversed a part of the South American coast in 1488–89,[2] have passed with their exploits into the accepted truths of history; but there was nothing improbable in what was said of them, and they flourish as counter-rumors always survive when attendant upon some great revelation like that of Columbus.

[1] See Vol. II. p. 34.

[2] See Vol. II. p. 34, where is a list of references, which may be increased as follows: Bachiller y Morales, *Antigüedades Americanas* (Havana, 1845). E. de Freville's *Mémoire sur le Commerce maritime de Rouen* (1857), i. 328, and his *La Cosmographie du moyen age, et les découvertes maritimes des Normands* (Paris, 1860), taken from the *Revue des Sociétés Savantes*. Gabriel Gravier's *Les Normands sur la route des Indes*, (Rouen, 1880). Cf. *Congrès des Américanistes* in *Compte Rendu* (1875), i. 397.

CRITICAL NOTES ON THE SOURCES OF INFORMATION.

A. Early Connection of Asiatic Peoples with the Western Coast of America. — The question of the origin of the Americans, whether an autochthonous one or associated with the continents beyond either ocean, is more properly discussed in another place of the present volume. We can only indicate here in brief such of the phases of the question as suppose an Asiatic connection, and the particular lines of communication.

The ethnic unity of the American races, as urged by Morton and others, hardly meets the requirements of the problem in the opinion of most later students, like Sir Daniel Wilson, for instance; and yet, if A. H. Keane represents, as he claims, the latest ethnological beliefs, the connection with Asia, of the kind that forms ethnic traces, must have been before the history of the present Asiatic races, since the correspondence of customs, etc. is not sufficient for more recent affiliation.[1] It should be remembered also, that if this is true, and if there is the strong physical resemblance between Asiatics and the indigenous tribes of the northwest coast which early travellers and physiologists have dwelt on, we have in such a correspondence strong evidence of the persistency of types.[2]

The Asiatic theory was long a favorite one. So popular a book as Lafitau's *Mœurs des Sauvages* (Paris, 1724) advocated it. J. B. Scherer's *Recherches historiques et géographiques sur le nouveau monde* (Paris, 1777) was on the same side. One of the earliest in this country, Benj. Smith Barton, to give expression to American scholarship in this field held like opinions in his *New Views of the Origin of the Tribes of America* (Philad., 1797).[3] Twenty years later (1816) one of the most active of the American men of letters advocated the same views, — Samuel L. Mitchell in the *Archæologia Americana* (i. 325, 338, 346). The weightiest authority of his time, Alex. von Humboldt, formulated his belief in several of his books: *Vues des Cordillères; Ansichten der Natur; Cosmos.*[4]

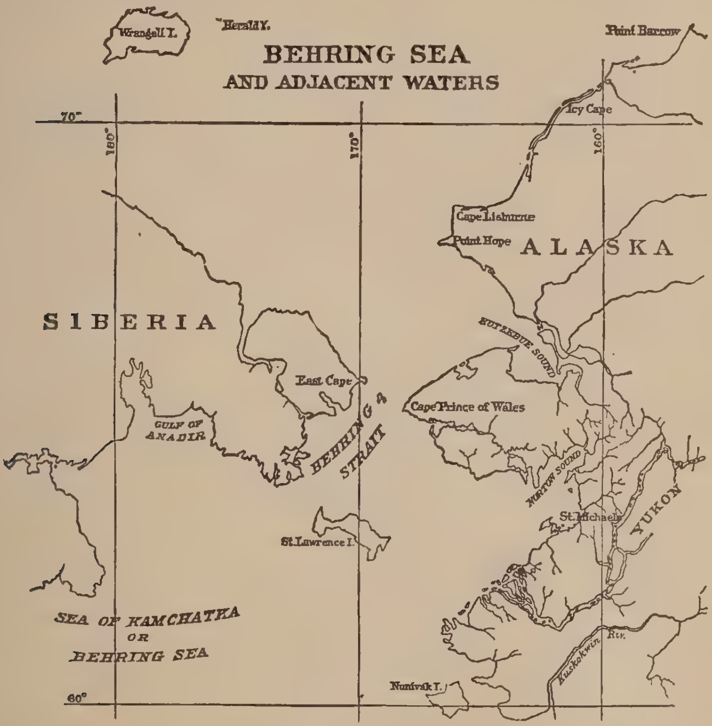
[1] "Ethnography and Philology of America," in H. W. Bates, *Central America, West Indies, and South America* (Lond., 1882). This was the opinion of Prescott (*Mexico*, Kirk's ed., iii. 398), and he based his judgment on the investigations of Waldeck, *Voyage dans la Yucatan*, and Dupaix, *Antiquités Méxicaines.* Stephens (*Central America*) holds similar views. Cf. Wilson, *Prehistoric Man*, i. 327; ii. 43. Dall (*Third Rep. Bur. Ethnol.*, 146) says: "There can be no doubt that America was populated in some way by people of an extremely low grade of culture at a period even geologically remote. There is no reason for supposing, however, that immigration ceased with these original people."

[2] Cf. references in H. H. Bancroft's *Native Races*, v. 39; *Amerika's Nordwest Küste; Neueste Ergebnisse ethnologischer Reisen* (Berlin, 1883), and the English version, *The Northwest Coast of America. Being Results of Recent Ethnological Researches from the collections of the Royal Museums at Berlin. Published by the Directors of the Ethnological Department* (New York, 1883).

[3] Cf. his *Observations on some remains of antiquity* (1796).

[4] Different shades of belief are abundant: F. Xavier de Orrio's *Solucion del gran problema* (Mexico, 1763); Fischer's *Conjecture sur l'origine des Américaines;* Adair's *Amer. Indians;* G. A. Thompson's *New theory of the two hemispheres* (London, 1815); Adam Hodgson's *Letters from No. Amer.* (Lond., 1824); J. H. McCulloh's *Researches* (Balt., 1829), ch. 10; D. B. Warden's "Recherches sur les Antiquités de

Of the northern routes, that by Behring's Straits is the most apparent, and Lyell says that when half-way over Dover Straits, which have not far from the same dimensions, he saw both the English and French shores at the same time, he was easily convinced that the



l'Amérique" in the *Antiquités Méxicaines* (Paris, 1834), vol. ii.; E. G. Squier's *Serpent Symbol* (N. Y., 1851); Brasseur de Bourbourg's *Hist. des Nations Civilisées*, i. 7; José Perez in *Revue Orientale et Américaine* (Paris, 1862), vol. viii.; Bancroft's *Native Races*, v. 30, 31, with references; Winchell's *Preadamites*, 397; a paper on Asiatic tribes in North America, in *Canadian Institute Proceedings* (1881), i. 171. Dabry de Thiersant, in his *Origine des Indiens du nouv. monde* (Paris, 1883), reopens the question, and Quatrefages even brings the story of Moncacht-Ape (see *post*, Vol. V. p. 77) to support a theory of frequent Asiatic communication. Tylor (*Early Hist. Mankind*, 209) says that the Asiatics must have taught the Mexicans to make bronze and smelt iron; and (p. 339) he finds additional testimony in the correspondence of myths, but Max Müller (*Chips*, ii. 168) demurs. Nadaillac, in his *L'Amérique préhistorique*, discussed this with the other supposable connections of the American people, and generally disbelieved in them; but Dall, in the English translation, summarily dismisses all consideration of them as unworthy a scientific mind; but points out what the early Indian traditions are (p. 526).

A good deal of stress has been laid at times on certain linguistic affiliations. Barton, in his *New Views*, sought to strengthen the case by various comparative vocabularies. Charles Farcy went over the proofs in his *Antiquités de l'Amérique: Discuter la valeur des documents relatifs à l'histoire de l'Amérique avant la conquête des Européens, et déterminer s'il existe des rapports entre les langues de l'Amérique et celles des tribus de l'Afrique et de l'Asie* (Paris, 1836). H. H. Bancroft (*Native Races*, v. 39) enumerates the sources of the controversy. Roehrig (*Smithsonian Report*, 1872) finds affinities in the languages of the Dakota or Sioux Indians. Pilling (*Bibliog. of Siouan languages*, p. 11) gives John Campbell's contributions to this comparative study. In the *Canadian Institute Proceedings* (1881), vol. i. p. 171, Campbell points out the affinities of the Tinneh with the Tungus, and of the Choctaws and Cherokees with the Ko-

NOTE. — Sketch map from the *U. S. Geodetic Survey*, 1880, App. xvi; also in *Journal Amer. Geog. Soc.*, xv. p. 114. Cf. Bancroft's *Nat. Races*, i. 35.

passage by Behring's Straits solved many of the difficulties of the American problem.[1]

The problem as to the passage by the Aleutian Islands is converted into the question whether primitive people could have successfully crossed an interval from Asia of 130 miles to reach the island Miedna, 126 more to Behring's Island, and then 235 to Attu, the westernmost of the Aleutian Islands, or nearly 500 miles in all, and to have crossed in such numbers as to affect the peopling of the new continent. There are some, like Winchell, who see no difficulty in the case.[2] There are no authenticated relics, it is believed, to prove the Tartar occupancy of the northwest of America.[3] That there have been occasional estrays upon the coasts of British Columbia, Oregon, and California, by the drifting thither of Chinese and Japanese junks, is certainly to be believed; but the argument against their crews peopling the country is usually based upon the probable absence of women in them, — an argument that certainly does not invalidate the belief in an infusion of Asiatic blood in a previous race.[4]

The easterly passage which has elicited most interest is one alleged to have been made by some Buddhist priests to a country called Fusang, and in proof of it there is cited the narrative of one Hœi-Shin, who is reported to have returned to China in A. D. 499. Beside much in the story that is ridiculous and impossible, there are certain features which have led some commentators to believe that the coast of Mexico was intended, and that the Mexican maguey plant was the tree fusang, after which the country is said to have been called. The story was first brought to the attention of Europeans in 1761, when De Guignes published his paper on the subject in the 28th volume (pp. 505–26) of the Academy of Inscriptions.[5] It seems to have attracted little attention till J. H. von Klaproth, in 1831, discredited the American theory in his "Recherches sur le pays de Fousang," published in the *Nouvelles Annales des Voyages* (2d ser., vol. xxi.), accompanied by a chart. In 1834 there appeared at Paris a French translation, *Annales des Empereurs du Japon* (*Nipon o dai itsi rau*), to which (vol. iv.) Klaproth appended an "Aperçu de l'histoire mythologique du Japon," in which he returned to the subject, and convinced Humboldt at least,[6] that the country visited was Japan, and not Mexico, though he could but see striking analogies, as he thought, in the Mexican myths and customs to those of the Chinese.[7]

In 1841, Karl Friedrich Neumann, in the *Zeit-*

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riaks. Cf. also *Ibid.*, July, 1884. Dall and Pinart pronounce against any affinity of tongues in the *Contributions to Amer. Ethnology* (Washington), i. 97. Cf. Short, *No. Amer. of Antiq.*, 494; Leland's *Fusang*, ch. 10.

[1] Behring's Straits, first opened, as Wallace says, in quaternary times, are 45 miles across, and are often frozen in winter. South of them is an island where a tribe of Eskimos live, and they keep constant communication with the main of Asia, 50 miles distant, and with America, 120 miles away. Robertson solved the difficulty by this route. Cf. *Contributions to Amer. Ethnology* (1877), i. 95–98; Warden's *Recherches;* Maury, in *Revue des deux Mondes*, Ap. 15, 1858; Peschel's *Races of Men*, p. 401; F. von Hellwald in *Smithsonian Report*, 1866; Short, p. 510; Bancroft, *Native Races*, v. 28, 29, 54; and Chavanne's *Lit. of the Polar Regions*, 58, 194 — the last page shows a list of maps. Max Müller (*Chips*, ii. 270) considers this theory a postulate only.

[2] *Contrib. to Amer. Ethnology*, i. 96; Lyell's *Principles of Geology*, 8th ed., 368; A. Ragine's *Découverte de l'Amérique du Kamtchatka et des îles Aléoutiennes* (St. Petersburg, 1868, 2d ed.); Pickering's *Races of Men;* Peschel's *Races of Men*, 397; Morgan's *Systems of Consanguinity.* Dall (*Tribes of the Northwest*, in Powell's *Rocky Mountain Region*, 1877, p. 96) does not believe in the Aleutian route.

On the drifting of canoes for long distances see Lyell's *Principles of Geology*, 11th ed., ii. 472; Col. B. Kennon in Leland's *Fousang;* *Rev. des deux Mondes*, Apr., 1858; Vining, ch. 1. Cf. Alphonse Pinart's "Les Aléoutes et leur origine," in *Mém. de la Soc. d'Ethnographie, session de 1872*, p. 155.

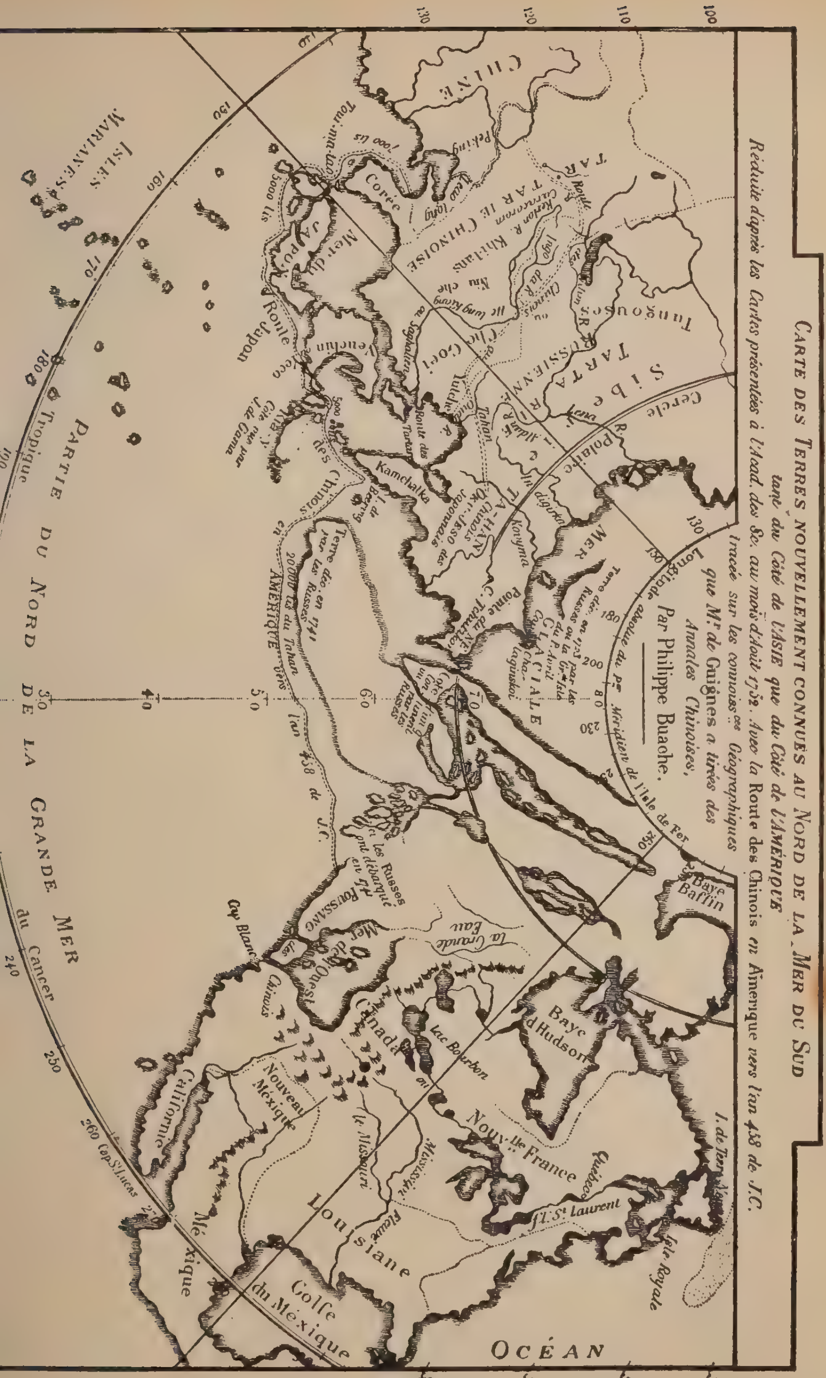
[3] Cf. references in H. H. Bancroft's *Nat. Races*, v. 54. We have an uncorroborated story of a Tartar inscription being found. Cf. Kalm's *Reise*, iii. 416; *Archæologia* (London, 1787), viii. 304.

[4] Gomara makes record of such floating visitors in the beginning of the sixteenth century. Horace Davis published in the *Amer. Antiq. Soc. Proc.* (Apr., 1872) a record of Japanese vessels driven upon the northwest coast of America and its outlying islands in a paper "On the likelihood of an admixture of Japanese blood on our northwest coast." Cf. A. W. Bradford's *American Antiquities* (N. Y., 1841); Whymper's *Alaska*, 250; Bancroft's *Nat. Races*, v. 52, with references; *Contributions to Amer. Ethnol.*, i. 97, 238; De Roquefeuil's *Journal du Voyage autour du Monde* (1876–79), etc. It is shown that the great Pacific current naturally carries floating objects to the American coast. Davis, in his tract, gives a map of it. Cf. Haven, *Archæol. U. S.*, p. 144; *Bull. Amer. Geog. Soc.* (1883), xv. p. 101, by Thomas Antisell; and *China Review*, Mar., Apr., 1888, by J. Edkins.

[5] *Recherches sur les navigations des Chinois du côte de l'Amérique et sur quelques peuples situés à l'extrémité orientale de l'Asie* (Paris, 1761). It is translated in Vining, ch. 1.

[6] *Examen Critique*, ii. 65, and *Ansichten der Natur*, or *Views of Nature*, p. 132.

[7] Much depends on the distance intended by a Chinese *li.* Klaproth translated the version as given by an


Carte des Terres nouvellement connues au Nord de la Mer du Sud tant du Côté de l'Asie que du Côté de l'Amérique
Réduite d'après les Cartes présentées à l'Acad. des Sc. au mois d'Août 1752. Avec la Route des Chinois en Amérique vers l'an 458 de J.C. tracée sur les connoissances Géographiques que Mr. de Guignes a tirées des Annales Chinoises,
Par Philippe Buache.
Chine
Peking
Corée
Mer du Japon
Japon
Isles Marianes
Tartarie Chinoise
Tartarie Russienne
Sibérie
Tunguses
Cercle Polaire
Kamchatka
Mer Glaciale
Amérique
Baye Baffin
Baye d'Hudson
Mer de l'Ouest
Canada
Nouv.lle France
Québec
Fl. St. Laurent
Isle Royale
Louisiane
Nouveau Méxique
Californie
Méxique
Golfe du Méxique
Océan
Partie du Nord de la Grande Mer
Tropique du Cancer

·Note.—The map of Buache, 1752, showing De Guignes' route of the Chinese emigration to Fusang. Reduced from the copy in the *Congrès internationale des Américanistes, Compte Rendu, Nancy, 1875.*

schrift für allgemeine Erdkunde (new series, vol. xvi.), published a paper on "Ost Asien und West Amerika nach Chinesischen Quellen aus dem fünften, sechsten und siebenten Jahrhundert," in which he gave a version of the Hœishin (Hœi-schin, Hui-shĕn) narrative, which Chas. G. Leland, considering it a more perfect form of the original than that given by De Guignes, translated into English in *The Knickerbocker Mag.* (1850), xxxvi. 301, as "California and Mexico in the fifth century."[1]

The next to discuss the question, and in an affirmative spirit, was Charles Hippolyte de Paravey, in the *Annales de Philosophie Chrétienne* (Feb., 1844), whose paper was published separately as *L'Amérique sous le nom de pays de Fou-Sang, est elle citée dès le 5e siècle de notre ère, dans les grandes annales de la Chine*, etc. *Discussion ou dissertation abrégée, où l'affirmative est prouvée* (Paris, 1844); and in 1847 he published *Nouvelles preuves que le pays du Fousang est l'Amérique*.[2]

The controversy as between De Guignes and Klaproth was shared, in 1862, by Gustave d'Eichthal, taking the Frenchman's side, in the *Revue Archéologique* (vol. ii.), and finally in his *Etudes sur les origines Bouddhiques de la civilisation Américaine* (Paris, 1865).[3]

In 1870, E. Bretschneider, in his "Fusang, or who discovered America?" in the *Chinese Recorder and Missionary Journal* (Foochow, Oct., 1870), contended that the whole story was the fabrication of a lying priest.[4]

In 1875 there was new activity in discussing the question. Two French writers of considerable repute in such studies attracted attention: the one, Lucien Adam, in the Congrès des Américanistes at Nancy (*Compte Rendu*, i. 145); and the other, Léon de Rosny, entered the discussions at the same session (*Ibid.* i. p. 131).[5]

The most conspicuous study for the English reader was Charles Godfrey Leland's *Fusang, or The discovery of America by Chinese Buddhist priests in the fifth century* (London, 1875).[6]

The Marquis d'Hervey de Saint Denis published in the *Actes de la Soc. d'Ethnographie* (1869), vol. vi., and later in the *Comptes Rendus* of the French Academy of Inscriptions, a *Mémoire sur le pays connu des anciens Chinois sous le nom de Fou-sang, et sur quelques documents inédits pour servir à l'identifier*, which was afterwards published separately in Paris, 1876, in which he assented to the American theory. The student of the subject need hardly go, however, beyond E. P. Vining's *An inglorious Columbus: or, Evidence that Hwui Shăn and a party of Buddhist monks from Afghanistan discovered America in the fifth century* A. D. (New York, 1885), since the compiler has made it a repository of all the essential contributions to the question from De Guignes down. He gives the geographical reasons for believing Fusang to be Mexico (ch. 20), comparing the original description of Fusang with the early accounts of aboriginal Mexico, and rehearsing the traditions, as is claimed, of the Buddhists still found

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early Chinese historian of the seventh century, Li Yan Tcheou, and Klaproth's version is Englished in Bancroft's *Nat. Races*, v. 33–36. Klaproth's memoir is also translated in Vining, ch. 3. Some have more specifically pointed to Saghalien, an island at the north end of the Japan Sea. Brooks says there is a district of Corea called Fusang (*Science*, viii. 402). Brasseur says the great Chinese encyclopædia describes Fusang as lying east of Japan, and he thinks the descriptions correspond to the Cibola of Castañeda.

[1] Again with a commentary in *The Continental Mag.* (New York, vol. i.). Subjected to the revision of Neumann, it is reproduced in Leland's *Fusang* (Lond., 1875). Cf. Vining, ch. 6, who gives also (ch. 10) the account in Shan-Hai-king as translated by C. M. Williams in *Mag. Amer. Hist.*, April, 1883.

[2] The pamphlets are translated in Vining, ch. 4 and 5. Paravey held to the Mexican theory, and he at least convinced Domenech (*Seven years' residence in the great deserts of No. Amer.*, Lond., 1860). Paravey published several pamphlets on subjects allied to this. His *Mémoire sur l'origine japonaise, arabe et basque de la civilisation des peuples du plateau de Bogota d'après les travaux de Humboldt et Siebold* (Paris, 1835) is a treatise on the origin of the Muyscas or Chibchas. Jomard, in his *Les Antiquités Américaines au point de vue des progrès de la géographie* (Paris, 1817) in the *Bull. de la Soc. Géog.*, had questioned the Asiatic affiliations, and Paravey replied in a *Réfutation de l'opinion émise par Jomard que les peuples de l'Amérique n'ont jamais eu aucun rapport avec ceux de l'Asie* (Paris, 1849), originally in the *Annales de philosophie Chrétienne* (May, 1849).

[3] Also in the *Rev. Archéologique* (vols. x., xi.), and epitomized in Leland. Cf. also Dr. A. Godron on the Buddhist mission to America in *Annales des Voyages* (Paris, 1864), vol. iv., and an opposing view by Vivien de St. Martin in *L'Année géographique* (1865), iii. p. 253, who was in turn controverted by Brasseur in his *Monuments Anciens du Mexique*.

[4] This paper is reprinted in Leland.

[5] Cf. also his *Variétés Orientales*, 1872; and his "L'Amérique, etait-elle connue des Chinois à l'époque du déluge?" in the *Archives de la Soc. Amér. de France*, n. s., iii. 191.

[6] S. W. Williams, in the *Journal of the American Oriental Soc.* (vol. xi.), in controverting the views of Leland, was inclined to find Fusang in the Loo-choo Islands. This paper was printed separately as *Notices of Fusang and other countries lying east of China in the Pacific ocean* (New Haven, 1881).

the Spaniards pervading the memories of the tives, and at last (ch. 37) summarizing all the ounds of his belief.[1]

The consideration of the Polynesian route as ossible avenue for peopling America involves the relations of the Malays to the inhabitants of the Oceanic Islands and the capacity of early man to traverse long distances by water.[2]

E. B. Tylor has pointed out the Asiatic relations of the Polynesians in the *Journal of the Anthropological Inst.*, xi. 401. Pickering, in the ethnological chart accompanying the reports of the Wilkes Expedition, makes the original people of Chili and Peru to be Malay, and he connects the Californians with the Polynesians.[1]

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[1] A good deal of labor has been bestowed to prove this identity of Fusang with Mexico. It is held to be und in the myths and legends of the two people by Charency in his *Mythe de Votan, étude sur les origines iatiques de la civilisation américaine* (Alençon, 1871), drawn from the *Actes de la Soc. philologique* (vol.); and he has enforced similar views in the *Revue des questions historiques* (vi. 283), and in his *Djemschid Quetzalcohuatl. L'histoire légendaire de la Nouvelle-Espagne rapprochée de la source indo-européenne* lençon, 1874). Humboldt thought it strange, considering other affinities, — as for instance in the Mexican lendars, — that he could find no Mexican use of phallic symbols; but Bancroft says they exist. Cf. *Native ces*, iii. 501; also see v. 40, 232; Brasseur's *Quatre Lettres*, p. 202; and John Campbell's paper on the ditions of Mexico and Peru as establishing such connections, in the *Compte Rendu, Congrès des Amér.* ancy, 1875), i. 348. Dr. Hamy saw in a monument found at Copan an inscription which he thought was e Taë-kai of the Chinese, the symbol of the essence of all things (*Bull. de la Soc. de Géog.*, 1886, and *urnal of the Anthropological Institute*, xvi. 242, with a cut of the stone). Dall controverts this point *cience*, viii. 402).

Others have dwelt on the linguistic resemblances. B. S. Barton in his *New Views* pressed this side of the estion. The presence of a monosyllabic tongue like the Otomi in the midst of the polysyllabic languages Mexico has been thought strongly to indicate a survival. Cf. Manuel Najera's *Disertacion sobre la lengua homi*, Mexico, 1845, and in *Amer. Philos. Soc. Trans.*, n. s., v.; Ampère's *Promenade en Amérique*, ii. 1; Prescott's *Mexico*, iii. 396; Warden's *Recherches* (in Dupaix), p. 125; Latham's *Races of Men*, 408; ncroft's *Nat. Races*, iii. 737; v. 39, with references. Others find Sanskrit roots in the Mexican. E. B. lor has indicated the Asiatic origin of certain Mexican games (*Journal of the Anthropol. Inst.*, xxiv.). naments of jade found in Nicaragua, while the stone is thought to be native only in Asia, is another indica- n, and they are more distinctively Asiatic than the jade ornaments found in Alaska (*Peabody Mus. Re- rts*, xviii. 414; xx. 548; *Proc. Mass. Hist. Soc.*, Jan., 1886).

On the general question of the Asiatic origin of the Mexicans see Dupaix's *Antiquités Méxicaines*, with luded papers by Lenoir, Warden, and Farcy; the *Report* on a railroad route from the Mississippi, 1853-54 ashington); Whipple's and other *Reports* on the Indian tribes; John Russell Bartlett's *Personal Narra- e* (1854); Brasseur's *Popul Vuh*, p. xxxix; Viollet le Duc's belief in a "yellow race" building the exican and Central American monuments, in Charnay's *Ruines Américaines*, and Charnay's traces of the ddhists in the *Popular Science Monthly*, July, 1879, p. 432; Le Plongeon's belief in the connection of the aya and Asiatic races in *Amer. Antiq. Soc. Proc.*, Apr. 30, 1879, p. 113; and some papers on the ancient exicans and their origin by the Abbé Jolibois, Col. Parmentier, and M. Emile Guimet, which, prepared for e Soc. de Géog. de Lyon, were published separately as *De l'origine des Anciens Peuples du Méxique* yon, 1875).

A few other incidental discussions of the Fusang question are these: R. H. Major in *Select Letters of lumbus* (1847); J. T. Short in *The Galaxy* (1875) and in his *No. Americans of Antiquity*; Nadaillac in *L'Amérique préhistorique*, 544; Gay's *Pop. Hist. U. S.* calls the story vague and improbable. In periodicals find: *Gentleman's Mag.*, 1869, p. 333 (reprinted in *Hist. Mag.*, Sept., 1869, xvi. 221), and 1870, repro- ced in *Chinese Recorder*, May, 1870; Nathan Brown in *Amer. Philolog. Mag.*, Aug., 1869; Wm. Speer in *inceton Rev.*, xxv. 83; *Penn Monthly*, vi. 603; *Mag. Amer. Hist.*, Apr., 1883, p. 291; *Notes and Queries*, 58, 78; iv. 19; *Notes and Queries in China and Japan*, Apr., May, 1869; Feb., 1870. Chas. W. Brooks intained on the other hand (*Proc. California Acad. Sciences*, 1876; cf. Bancroft's *Native Races*, v. 51), t the Chinese were emigrants from America. There is a map of the supposed Chinese route to America in *Congrès des Américanistes* (Nancy, 1875), vol. i.; and Winchell, *Pre-Adamites*, gives a chart showing ferent lines of approach from Asia. Stephen Powers (*Overland Monthly*, Apr., 1872, and *California ad. Sciences*, 1875) treats the California Indians as descendants of the Chinese, — a view he modifies in the *ntrib. to Amer. Ethnology*, vol. iii., on "Tribes of California." It is claimed that Chinese coin of the eenth century have been found in mounds on Vancouver's Island. Cf. G. P. Thurston in *Mag. Amer. Hist.*, i. p. 457. The principal lists of authorities are those in Vining (app.), and Watson's in Anderson's *Amer- not discovered by Columbus.*

[2] From Easter Island to the Galapagos is 2,000 miles, thence to South America 600 more. On such long grations by water see Waitz, *Introduction to Anthropology*, Eng. transl., p. 202. On early modes of vigation see Col. A. Lane Fox in the *Journal Anthropological Inst.* (1875), iv. 399. Otto Caspari gives a p of post-tertiary times in his *Urgeschichte der Menschheit* (Leipzig, 1873), vol. i., in which land is made stretch from the Marquesas Islands nearly to South America; while large patches of land lie between Asia d Mexico, to render migration practicable. Andrew Murray, in his *Geographical Distribution of Mammals*

The earliest elaboration of this theory was in John Dunmore Lang's *View of the origin and migrations of the Polynesian nations, demonstrating their ancient discovery and progressive settlement of the continent of America* (London, 1834; 2d ed., Sydney, 1877). Francis A. Allen has advanced similar views at the meetings of the Congrès des Américanistes at Luxembourg and at Copenhagen.[2]

The Mongol theory of the occupation of Peru, which John Ranking so enthusiastically pressed in his *Historical researches on the conquest of Peru, Mexico, Bogota, Natchez, and Talomeco, in the thirteenth century, by the Mongols, accompanied with elephants; and the local agreement of history and tradition, with the remains of elephants and mastodontes found in the new world* [etc.] (London, 1827), implies that in the thirteenth century the Mongol emperor Kublai Khan sent a fleet against Japan, which, being scattered in a storm, finally in part reached the coasts of Peru, where the son of Kublai Khan became the first Inca.[3] The book hardly takes rank as a sensible contribution to ethnology, and Prescott says of it that it embodies "many curious details of Oriental history and manners in support of a whimsical theory."[4]

B. Ireland the Great, or White Man's Land. — The claims of the Irish to have preceded the Norse in Iceland, and to have discovered America, rest on an Icelandic saga, which represents that in the tenth century Are Marson, driven off his course by a gale, found a land which became known as Huitramannaland, or white man's land, or otherwise as Irland it Mikla.[5] This region was supposed by the colonists of Vinland to lie farther south, which Rafn[6] interprets as being along the Carolina coast,[7] and others have put it elsewhere, as Beauvois in Canada above the Great Lakes; and still others see no more in it than the pressing of some storm-driven vessel to the Azores[8] or some other Atlantic island. The story is also coupled, from another source, with the romance of Bjarni Asbrandson, who sailed away from Iceland and from a woman he loved, because the husband and relatives of the woman made it desirable that

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(London, 1866), is almost compelled to admit (p. 25) that as complete a circuit of land formerly crossed the southern temperate regions as now does the northern; and Daniel Wilson, *Prehistoric Man*, holds much the same opinion. The connection of the flora of Polynesia and South America is discussed by J. D. Hooker in the *Botany of the Antarctic Voyage of the Erebus and Terror, 1839–43*, and in his *Flora of Tasmania*. Cf. *Amer. Journal of Science and Arts*, Mar., May, 1854; Jan., May, 1860.

[1] *Races of Men.*

[2] *Compte Rendu*, 1877, p. 79; 1883, p. 246; the latter being called "Polynesian Antiquities, a link between the ancient civilizations of Asia and America." Further discussions of the Polynesian migrations will be found as follows: A. W. Bradford's *Amer. Antiquities* (N. Y., 1841); Gallatin (*Am. Eth. Soc. Trans.*, i. 176) disputed any common linguistic traces, while Bradford thought he found such; Lesson and Martinet's *Les Polynésiens, leur origine, leurs migrations, leur langage;* Wilson's *Prehistoric Man*, ii. 344; Jules Garnier's "Les migrations polynésiennes" in *Bull. de la Soc. de Géog. de Paris*, Jan., June, 1870; G. d'Eichthal's "Etudes sur l'histoire primitive des races océaniennes et Américaines" in *Mem. de la Soc. Ethnologique* (vol. ii.); Marcoy's *Travels in South America;* C. Staniland Wake's *Chapters on Man*, p. 200 a "Rapport de la Polynésie et l'Amérique" in the *Mémoires de la Soc. Ethnologique*, ii. 223; A. de Quatrefages de Bréau's *Les Polynésiens et leurs migrations* (Paris, 1866), from the *Revue des deux Mondes*, Feb. 1864; O. F. Peschel in *Ausland*, 1864, p. 348; W. H. Dall in *Bureau of Ethnology Rept.*, 1881–82, p. 147 Allen's paper, already referred to, gives references.

[3] Bancroft, *Nat. Races*, v. 44, with references, p. 48, epitomizes the story. Cf. Short, 151. There was a tradition of giants landing on the shore (Markham's *Cieza de Leon*, p. 190). Cf. Forster's *Voyages*, 43.

[4] A belief in the Asiatic connection has taken some curious forms. Montesinos in his *Memorias Peruana* held Peru to be the Ophir of Solomon. Cf. Gotfriedus Wegner's *De Navigationis Solomonæis* (Frankfort 1689). Horn held Hayti to be Ophir, and he indulges in some fantastic evidences to show that the Iroquois *i. e.* Yrcas, were Turks! Cf. Onffroy de Thoron in *Le Globe*, 1869. C. Wiener in his *L'Empire des Inca* (ch. 2, 4) finds traces of Buddhism, and so does Hyde Clarke in his *Khita-Peruvian Epoch* (1877). Lope has written on *Les Races Aryennes de Pérou* (1871). Cf. Robert Ellis, *Peruvia Scythica. The Quich Language of Peru, its derivation from Central Asia with the American languages in general* (London 1875). Grotius held that the Peruvians were of Chinese stock. Charles Pickering's ethnological map gives Malay origin to the islands of the Gulf of Mexico and a part of the Pacific coast, the rest being Mongolian.

[5] The story is given in English by De Costa (*Pre-Columbian Disc. of America*, p. 85) from the *Landnáma bók*, no. 107. Cf. *Saga of Thorfinn Karlsefne*, ch. 13, and that of Erik the Red. Leif is said in the saga to have met shipwrecked white people on the coasts visited by him (*Hist. Mag.*, xiii. 46).

[6] *Antiquitates Americanæ*, 162, 183, 205, 210, 211, 212, 214, 319, 446–51.

[7] Brinton in *Hist. Mag.*, ix. 364; Rivero and Tschudi's *Peru.*

[8] Schöning's *Heimskringla. Grönlands Historiske Mindesmærker*, i. 150.

should. Thirty years later, the crew of an- er ship, wrecked on a distant coast,[1] found t the people who took them prisoners spoke sh,[2] and that their chieftain was this same ren- ıde, who let them go apparently for the pur- se of conveying some token by which he would remembered to the Thurid of his dreams. Of ırse all theorists who have to deal with these posed early discoveries by Europeans con- ct, each with his own pet scheme, the prevail- legendary belief among the American Indi- ; that white men at an early period made ir appearance on the coasts all the way from ntral America to Labrador.[3] Whether these ange comers be St. Patrick,[4] St. Brandan n, or some other Hibernian hero, with his followers, is easily to be adduced, if the disposing mind is inclined.

There have been of late years two considerable attempts to establish the historical verity of some of these alleged Irish visits.[5]

C. The Norse in Iceland. — The chief original source for the Norse settlement of Iceland is the famous *Landnamabók*,[6] which is a record by various writers, at different times, of the partitioning and ownership of lands during the earliest years of occupation.[7] This and other contemporary manuscripts, including the *Heimskringla* of Snorre Sturleson and the great body of Icelandic sagas, either at first hand or as filtered through the leading writers on Ice-

Eyrbyggja Saga, ch. 64, and given in English in De Costa's *Pre-Columbian Discovery*, p. 89. Cf. Sir lter Scott's version of this saga and the appendix of Mallet's *Northern Antiquities.*

Traces of Celtic have been discovered by some of the philologists, when put to the task, in the American guages. Cf. Humboldt, *Relation Historique*, iii. 159. Lord Monboddo held such a theory.

Brinton's *Myths of the New World*, 176. One of the earliest accounts which we have of the Cherokees hat by Henry Timberlake (London, 1765), and he remarks on their lighter complexion as indicating a pos- le descent from these traditionary white men.

Richard Broughton's *Monasticon Britannicum* (London, 1655), pp. 131, 187.

A Memoir on the European Colonization of America in ante-historic times was contributed to the *Pro- dings* of the American Ethnological Society in 1851, to which E. G. Squier added some notes, the original per being by Dr. C. A. A. Zestermann of Leipzig. The aim was to prove, by the similarity of remains, the nection of the peoples who built the mounds of the Ohio Valley with the early peoples of northwestern rope, a Caucasian race, which he would identify with the settlers of Irland it Mikla, and with the coming the white-bearded men spoken of in Mexican traditions, who established a civilization which an inundating pulation from Asia subsequently buried from sight. This European immigration he places at least 1,200 rs before Christ. Squier's comments are that the monumental resemblances referred to indicate similar ditions of life rather than ethnic connections.

The other advocate was Eugène Beauvois in a paper published in the *Compte Rendu du Congrès des éricanistes* (Nancy, 1875, p. 4) as *La découverte du nouveau monde par les irlandais et les premières ces du christianisme en Amérique avant l'an 1000*, accompanied by a map, in which he makes Irland it kla correspond to the provinces of Ontario and Quebec. Again, in the session at Luxembourg in 1877, he leavored to connect the Irish colony with the narrative of the seaman in the Zeno accounts, in a paper which called *Les Colonies Européennes du Markland et de l'Escociland au xiv. Siècle, et les vestiges qui en sistèrent jusqu'aux xvi^e et xvii^e Siècles*, and in which he identifies the Estotiland of the Frislanda riner. M. Beauvois again, at the Copenhagen meeting of the same body, read a paper on *Les Relations colombiennes des Gaels avec le Mexique* (Copenhagen, 1883, p. 74), in which he elicited objections from Lucien Adam. Beauvois belongs to that class of enthusiasts somewhat numerous in these studies of pre- umbian discoveries, who have haunted these Congresses of Americanists, and who see overmuch. Other erences to these Irish claims are to be found in Laing's *Heimskringla*, i. 186; Beamish's *Discovery of erica* (London, 1841); Gravier's *Découverte de l'Amérique*, p. 123, 137, and his *Les Normands sur la te, etc.*, ch. 1; Gaffarel's *Etudes sur la rapports de l'Amérique*, pp. 201, 214; Brasseur's introd. to his *ul Vuh;* De Costa's *Pre-Columbian Discovery*, pp. xviii, xlix, lii; Humboldt's *Cosmos* (Bohn), ii. 607; sk in *Mass. Hist. Soc. Proc.*, xviii. 21; *Journal London Geog. Soc.*, viii. 125; Gay's *Pop. Hist. U. S.*, i. 53; K. Wilhelmi's *Island, Hvitramannaland, Grönland und Vinland, oder Der Norrmänner Leben auf and und Grönland und deren Fahrten nach Amerika schon über 500 Jahre vor Columbus* (Heidelberg, 2).

The account in the Landnámabók is briefly rehearsed in ch. 8 of C. W. Paijkull's *Summer in Iceland* ndon, 1868).

There are various editions, of which the best is called that of Copenhagen, 1843. The *Islendingabók*, a t of epitome of a lost historical narrative, is considered an introduction to the *Landnámabók.* Much of early story will be found in Latin in the *Islenzkir Annáler, sive Annales Islandici ab anno Christi 803 anno 1430* (Copenhagen, 1847); in the *Scripta historica Islandorum de rebus veterum Borealium*, pub- ed by the Royal Soc. of Northern Antiquaries at Copenhagen, 1828–46; and in Jacobus Langebek's *Scrip- es Rerum Danicarum medii ævi* (Copenhagen, 1772–1878, — the ninth volume being a recently added ex).

landic history, constitute the material out of which is made up the history of Iceland, in the days when it was sending its adventurous spirits to Greenland and probably to the American main.[1]

Respecting the body of the sagas, Laing (*Heimskringla*, i. 23) says: "It does not appear that any saga manuscript now existing has been written before the fourteenth century, however old the saga itself may be. It is known that in the twelfth century, Are Frode, Sæmund and others began to take the sagas out of the traditional state and fix them in writing; but none of the original skins appear to have come down to our time, but only some of the numerous copies of them." Laing (p. 24) also instances numerous sagas known to have existed, but they are not now recognized;[2] and he gives us (p. 30) the substance of what is known respecting the writers and transcribers of this early saga literature. It is held that by the beginning of the thirteenth century the sagas of the discoveries and settlements had all been put in writing, and thus the history, as it exists, of mediæval Iceland is, as Burton says (*Ultima Thule*, i. 237), more complete than that of any European country.[3]

Among the secondary writers, using either at first or second hand the early MS. sources, the following may be mentioned: —

One of the earliest brought to the attention of the English public was *A Compendious Hist. of the Goths, Swedes and Vandals, and other norther powers* (London, 1650 and 1658), translated in a abridged form from the Latin of Olaus Magnus which had been for more than a hundred year the leading comprehensive authority on th northern nations. The *Svearikes Historia* (Stockholm, 1746–62) of Olof von Dalin and the similar work of Sven Lagerbring (1769–1788), covering the early history of the north, are of interest for the comparative study of the north, rathe than as elucidating the history of Iceland i particular.[4] More direct aid will be got fro Mallet's *Northern Antiquities* (London edition 1847) and from Wheaton's *Northmen*. Mor special is the *Histoire de l'Island* of Xavie Marmier; and the German historian F. C. Dahlman also touches Iceland with particular attention in his *Geschichte von Dänemark bis zu Reformation, mit Inbegriff von Norwegen un Island* (Hamburg, 1840–43).

A history of more importance than any othe yet published, and of the widest scope, was tha of Sweden by E. J. Geijer (continued by F. Carlson), which for the early period (down t 1654) is accessible in English in a translation b J. H. Turner (London, 1845).[5]

Prominent among the later school of northern historians, all touching the Icelandic annal more or less, have been Peter Andreas Munc in his *Det Norske Folks Historie* (Christiani 1852–63);[6] N. M. Petersen in his *Danmar Historie i Hedenold* (Copenhagen, 1854–55);

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[1] A convenient survey of this early literature is in chapter 1 of the *History of the Literature of the Scandinavian North, from the most ancient times to the present, by Frederick Winkel Horn, revised by th author, and translated by Rasmus B. Anderson* (Chicago, 1884). The text is accompanied by useful bibliographical details. Cf. B. F. De Costa in *Journal Amer. Geog. Soc.* (1880), xii. 159.

[2] Saxo Grammaticus acknowledges his dependence on the Icelandic sagas, and is thought to have used so which had not been yet put into writing.

[3] Baring-Gould in his *Iceland, its Scenes and Sagas* (London, 1863) gives in his App. D a list of thirty-five published sagas, sixty-six local histories, twelve ecclesiastical annals, and sixty-nine Norse annals. C the eclectic list in Laing's *Heimskringla*, i. 17.

Konrad Maurer has given an elaborate essay on this early literature in his *Ueber die Ausdrücke: altnordische, altnorwegische und isländische Sprache* (Munich, 1867), which originally appeared in the *Abhandlunge* of the Bavarian Academy.

G. P. Marsh translated P. E. Müller's "Origin, progress, and decline of Icelandic historical literature" *The American Eclectic* (N. Y., 1841, — vols. i., ii.). In 1781, Lindblom printed at Paris a French translatio of Bishop Troil's *Lettres sur l'Islande*, which contained a catalogue of books on Iceland and an enumeratio of the Icelandic sagas. (Cf. Pinkerton's *Voyages*, vol. i.) Chavanne's *Bibliography of the Polar Region* p. 95, has a section on Iceland.

Solberg's list of illustrative works, appended to Anderson's version of Horn's *Lit. of the Scandinavia North*, is useful so far as the English language goes. Periodical contributions also appear in *Poole's Ind* (p. 622) and *Supplement*, p. 214.

Burton (*Ultima Thule*, i. 239) enumerates the principal writers on Iceland from Arngrimur Jónsson dow including the travellers of this century.

[4] The more general histories of Scandinavia, like Sinding's English narrative, — not a good book, b accessible, — yield the comparisons more readily.

[5] There are also German (Gotha, 1844–75) and French versions (Paris). The best German version, *Geschichte Schwedens* (Hamburg and Gotha, 1832–1887), is in six volumes, a part of the *Geschichte der e päischen Staaten*. Vol. 1–3, by E. G. Geijer, is translated by O. P. Leffler; vol. 4, by F. F. Carlson, is t lated by J. G. Petersen; vol. 5, 6, by F. F. Carlson.

[6] Published in German at Lübeck in 1854 as *Das heroische Zeitalter der Nordisch-Germanischen V und die Wikinger-Züge.*

ɛyser in his *Norges Historie* (Christiania, 1866–
) ; J. E. Sars in his *Udsigt over den Norske*
storie (Christiania, 1873–77); but all are sur-
ssed by Konrad Maurer's *Island von seiner*
ten Entdeckung bis zum Untergange des Frei-
ates, — A. D. 800–1262 (Munich, 1874), pub-
hed as commemorating the thousandth anni-
rsary of the settlement of Iceland, and it has
repute of being the best book on early Ice-
dic history.[1]

The change from Paganism to Christianity
cessarily enters into all the histories covering
tenth and eleventh centuries; but it has
ecial treatment in C. Merivale's *Conversion of*
Northern Nations (Boyle lectures, — London,
56).[2]

There is a considerable body of the later liter-
ıre upon Iceland, retrospective in character,
d affording the results of study more or less patient as to the life in the early Norse days in Iceland.[3]

G. W. Dasent's introduction to his *Story of Burnt Njal* (Edinburgh, 1861)[4] and his *Norsemen in Iceland* (Oxford Essays, 1858) give what Max Müller (*Chips from a German Workshop*, ii. 191) calls "a vigorous and lively sketch of primitive northern life;" and are well supplemented by Sabine Baring-Gould's *Iceland, its scenes and sagas* (London, 1863 and later), and Richard F. Burton's *Ultima Thule, with an historical introduction* (London, 1875).[5]

D. GREENLAND AND ITS RUINS. — The sagas still serve us for the colonization of Greenland, and of particular use is that of Eric the Red.[6] The earliest to use these sources in the historic spirit was Torfæus in his *Historia Gronlandiæ Antiquæ* (1715).[7] The natural successor of

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Maurer had long been a student of Icelandic lore, and his *Isländische Volkssagen der Gegenwart gesam-*
lt und verdeutscht (Leipzig, 1860) is greatly illustrative of the early north. Conybeare (*Place of Iceland*
the History of European Institutions, preface) says: "To any one writing on Iceland the elaborate works
the learned Maurer afford at once a help and difficulty: a help in so far as they shed the fullest light
on the subjects; a difficulty in that their painstaking completeness has brought together well-nigh every-
ng that can be said."

What is known as the Kristni Saga gives an account of this change. Cf. Eugène Beauvois, *Origines et*
dation du plus ancien évêché du nouveau monde. Le diocèse de Gardhs en Grœnland, 986–1126
aris, 1878), an extract from the *Mémoires de la Soc. d'Histoire, etc., de Beaune;* C. A. V. Conybeare's
ıce of Iceland in the history of European institutions (1877); Maurer's *Beiträge zur Rechtsgeschichte*
germanischen Nordens; Wheaton's *Northmen;* Worsaae's *Danes and Norwegians in England*, p. 332;
ob Rudolph Keyser's *Private Life of the Old Northmen*, as translated by M. R. Barnard (London, 1868),
l his *Religion of the Northmen*, as translated by B. Pennock (N. Y., 1854); *Quarterly Review*, January,
2; and references in McClintock and Strong's *Cyclopædia*, under Iceland.

Such are the Swedish work of A. M. Strinhold, known in the German of E. F. Frisch as *Wikingzüge,*
ıatsverfassung und Sitten der alten Scandinaver (Hamburg, 1839–41).

summarized statement of life in Iceland in the early days is held to be well made out in Hans O. H.
debrand's *Lifvet på Island under Sagotiden* (Stockholm, 1867), and in A. E. Holmberg's *Nordbon under*
dnatiden (Stockholm). J. A. Worsaae published his *Vorgeschichte des Nordens* at Hamburg in 1878.
vas improved in a Danish edition in 1880, and from this H. F. Morland Simpson made the *Prehistory of*
North, based on contemporary materials (London, 1886), with a memoir of Worsaae (d. 1885), the fore-
st scholar in this northern lore.

This book is recognized as one of the best commentaries and most informing books on Icelandic history,
l this writer's introduction to Gudbrand Vigfússon's *Icelandic-English Dictionary* (3 vols., Cambridge,
g., 1869, 1870, 1874) is of scholarly importance.

The millennial celebration of the settlement of Iceland in 1874 gave occasion to a variety of books and
ɔers, more or less suggestive of the early days, like Samuel Kneeland's *American in Iceland* (Boston,
6); but the enumeration of this essentially descriptive literature need not be undertaken here.

Antiquitates Americanæ, pp. 1–76, with an account of the Greenland MSS. (p. 255). Müller's *Sagen-*
liothek. Arngrimur Jónsson's *Grönlandia* (Iceland, 1688). A fac-simile of the title is in the *Carter-Brown*
talogue, ii., no. 1356. A translation by Rev. J. Sephton is in the *Proc. Lit. and Philos. Soc. of Liverpool*,
xxxiv. 183, and separately, Liverpool, 1880. There is a paper in the *Jahresbericht der geographischen*
sellschaft in München für 1885 (Munich, 1886), p. 71, by Oskar Brenner, on "Grönland im Mittelalter
h einer altnorwegischen Quelle."

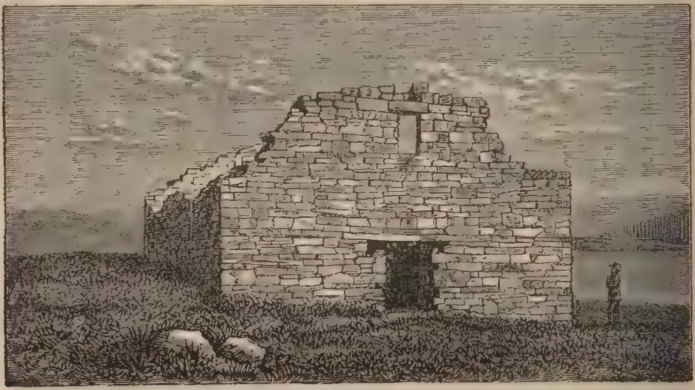
ome of the earliest references are: Christopherson Claus' *Den Grölandske Chronica* (Copenhagen, 1608),
iced in the *Carter-Brown Catalogue*, ii., no. 64. Gerald de Veer's *True and perfect description of three*
ages speaks in its title (*Carter-Brown*, ii. 38) of "the countrie lying under 80 degrees, which is thought to
Greenland, where never man had been before." Antoine de la Sale wrote between 1438 and 1447 a curious
k, printed in 1527 as *La Salade*, in which he refers to Iceland and Greenland (Gronnellont), where white
rs abound (Harrisse, *Bib. Am. Vet.*, no. 140).

This book is now rare. Dufossé prices it at 50 francs; F. S. Ellis, London, 1884, at £5.5.0. Before
rfæus, probably the best known book was Isaac de la Peyrère's *Relation du Groenland* (Paris, 1647). It

Torfæus and the book upon which later writers mostly depend is David Crantz's *Historie von Grönland, enthaltend die Beschreibung des Landes und der Einwohner, insbesonders die Geschichten der dortigen Mission. Nebst Fortsetzung* (Barby, 1765–70, 3 vols.). An English translation appeared in London in 1767, and again, though in an abridged form with some changes, in 1820.[1]

Crantz says of his own historic aims, referring to Torfæus and to the accounts given by the Eskimos of the east coast, that he has tried to investigate "where the savage inhabitants came from, and how the ancient Norwegian inhabitants came to be so totally extirpated," while at the same time he looks upon the history of the Moravian missions as his chiefest theme.

The principal source for the identification of the ruins of Greenland is the work compiled by Rafn and Finn Magnusen, *Grönlands Historisk Mindesmærker*,[2] with original texts and Danis versions. Useful summaries and observation will be found in the paper by K. Steenstrup o "Old Scandinavian ruins in South Greenland" in the *Compte Rendu, Congrès des Américaniste* (Copenhagen, 1883, p. 108), and in one on "Le Voyages des Danois au Greenland" in the sam (p. 196). Steenstrup's paper is accompanied b photographs and cuts, and a map marking th site of the ruins. The latest account of ther is by Lieut. Holm in the *Meddelelser om Grönland* (Copenhagen, 1883), vol. vi. Other view and plans showing the arrangement of thei dwellings and the curious circular ruins,[3] whic seems to have usually been near their churche are shown in the Baron Nordenskjöld's *De andra dicksonska expeditionen till Grönland, des inre isöken och dess ostkust, utförd år 1883* (Stock



RUINS OF THE CHURCH AT KATORTOK.*

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is one of the earliest books to give an account of the Eskimos. It was again printed in 1674 in *Recueil* *Voyages du Nord*. A Dutch edition at Amsterdam in 1678 (*Nauwkenrige Beschrijvingh van Groenlan* was considerably enlarged with other matter, and this edition was the basis of the German version publishe at Nuremberg, 1679. Peyrère's description will be found in English in a volume published by the Hak' Society in 1855, where it is accompanied by two maps of the early part of the seventeenth century. Cf. Ca Brown, ii., no. 1192, note; Sabin, x. p. 70.

[1] Pilling (*Eskimo Bibliog.*, p. 20) gives the most careful account of editions. Cf. Sabin, v. 66. A Dutc translation at Haarlem in 1767 was provided with better and larger maps than the original issue; and th version was again brought out with a changed title in 1786. There was a Swedish ed. at Stockholm in 1 and a reprint of the original German at Leipzig in 1770, and it is included in the *Bibliothek der neues* *Reisebeschreibungen* (Frankfort, 1779-1797), vol. xx. Cf. Carter-Brown, ii., nos. 1443, 1576, 1577, 1671, 17

[2] This constitutes in 3 vols. a sort of supplement to the *Antiquitates Americanæ*. Cf. *Dublin Review*, xxv 35; *Bulletin de la Soc. de Géog. de Paris*, 3d ser., vol. vi., and a synopsis of the *Mindesmæker* in *T* *Sacristy*, Feb. 1, 1871 (London).

[3] The principal ruin is that of a church, and it will be found represented in the *Antiquitates America* and again by Nordenskjöld, Steenstrup, J. T. Smith (*Discovery of America*, etc.), Horsford; and, not to na more, in Hayes's *Land of Desolation* (and in the French version in *Tour du Monde*, xxvi.).

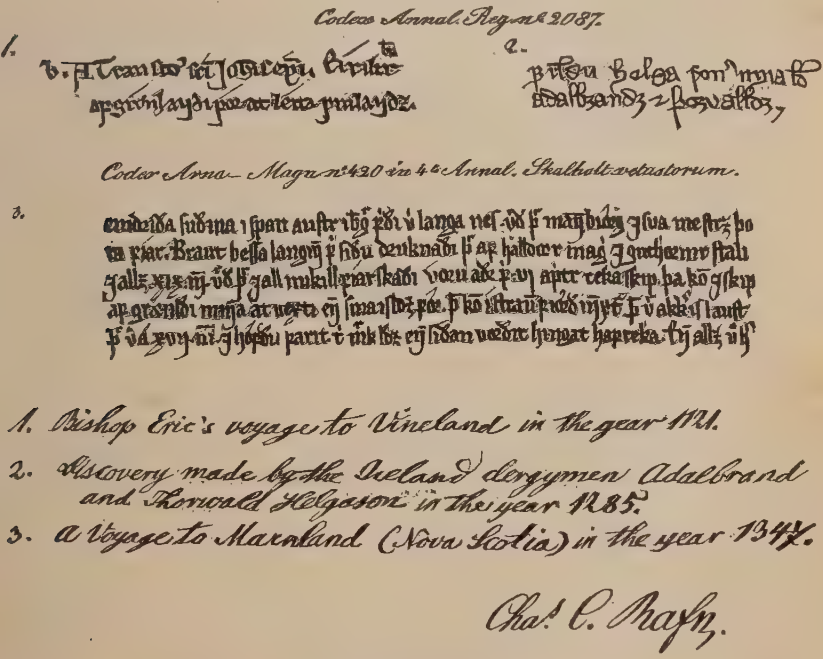
* After a cut in Nordenskjöld's *Den Andra Dicksonska Expeditionen till Grönland*, p. 369, following o in *Efter Meddelelser om Grönland*.

holm, 1885), the result of the ripest study and closest contact.

We need also to scan the narratives of Hans Egede and Graah. Parry found in 1824, on an island on the Baltic coast, a runic stone, commemorating the occupancy of the spot in 1135 (*Antiquitates Americanæ;* Mallet's *Northern Antiquities*, 248); and in 1830 and 1831 other runes were found on old gravestones (Rink's *Danish Greenland*, app. v.; Laing's *Heimskringla*, i. 151). These last are in the Museum at Copenhagen. Most of these imperishable relics have been found in the district of Julianeshaab.[1]

E. The Vinland Voyages. — What Leif and Karlsefne knew they experienced, and what the sagas tell us they underwent, must have just the difference between a crisp narrative of personal adventure and the oft-repeated and embellished story of a fireside narrator, since the traditions of the Norse voyages were not put in the shape of records till about two centuries had elapsed, and we have no earlier manuscript of such a record than one made nearly two hundred years later still. It is indeed claimed that the transmission by tradition in those days was a different matter in respect to constancy and exactness from what it has been known to be in later times; but the assumption lacks proof and militates against well-known and inevitable processes of the human mind.

In regard to the credibility of the sagas, the northern writers recognize the change which came over the oral traditionary chronicles when the romancing spirit was introduced from the more southern countries, at a time while the copies of the sagas which we now have were making, after having been for so long a time orally handed down; but they are not so successful in making plain what influence this imported spirit had on particular sagas, which we



Codex Annal. Reg. n° 2087.

1.

2.

Codex Arna-Magn. n° 420 in 4to Annal. Skalholt. vetustorum.

3.

1. Bishop Eric's voyage to Vineland in the year 1121.
2. Discovery made by the Iceland clergymen Adalbrand and Thorvald Helgason in the year 1285.
3. A Voyage to Markland (Nova Scotia) in the year 1347.

Chas C. Rafn.

SAGA MANUSCRIPT.*

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[1] Rafn in his *Americas arctiske landes Gamle Geographie efter de Nordiske Oldskrifter* (Copenhagen, 1845) gives the seals of some of the Greenland bishops, various plans of the different ruins, a view of the Katortok church with its surroundings, engraving of the different runic inscriptions, and a map of the Julianehaab district.

* This is a portion of one of the plates in the *Antiquitates Americanæ*, given by Rafn to Charles Sumner, with a key in manuscript by Rafn himself. His signature is from a copy of his *Mémoire* given by him to Edward Everett, and now in Harvard College library.

are asked to receive as historical records. They seem sometimes to forget that it is not necessary to have culture, heroes, and impossible occurrences to constitute a myth. A blending of history and myth prompts Horn to say "that some of the sagas were doubtless originally based on facts, but the telling and re-telling have changed them into pure myths." The unsympathetic stranger sees this in stories that the patriotic Scandinavians are over-anxious to make appear as genuine chronicles.[1] It is certainly unfortunate that the period of recording the older sagas coincides mainly with the age of this southern romancing influence.[2] It is a somewhat anomalous condition when long-transmitted oral stories are assigned to history, and certain other written ones of the age of the recorded sagas are relegated to myth. If we would believe some of the northern writers, what appears to be difference in kind of embellishment was in reality the sign that separated history from fable.[3] Of the interpreters of this olden lore, Torfæus has been long looked upon as a characteristic exemplar, and Horn[4] says of his works that they are "perceptibly lacking in criticism. Torfæus was upon the whole incapable of distinguishing between myth and history."[5]

Erasmus Rask, in writing to Wheaton in

RUIN AT KATORTOK.*

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[1] This tendency of the Scandinavian writers is recognized among themselves. Horn (Anderson's translation, 324) ascribes it to "an unbridled fancy and want of critical method rather than to any wilful perversion of historical truth. This tendency owed its origin to an intense patriotism, a leading trait in the Swedish character, which on this very account was well-nigh incorrigible."

[2] Dasent translates from the preface to *Egils Saga* (Reikjavik, 1856): "The sagas show no wilful purpose to tell untruths, but simply are proofs of *the beliefs and turns of thought of men in the age when the sagas were reduced to writing*" (*Burnt Njal*, i. p. xiii).

[3] Rink (*Danish Greenland*, p. 3) says of the sagas that "they exist only in a fragmentary condition, and bear the general character of popular traditions to such a degree that they stand much in need of being corroborated by collateral proofs, if we are wholly to rely upon them in such a question as an ancient colonization of America." So he proceeds to enumerate the kind of evidence, which is sufficient in Greenland, but is wholly wanting in other parts of America, and to point out that the trustworthiness of the sagas of the Vinland voyages exists only in regard to their general scope.

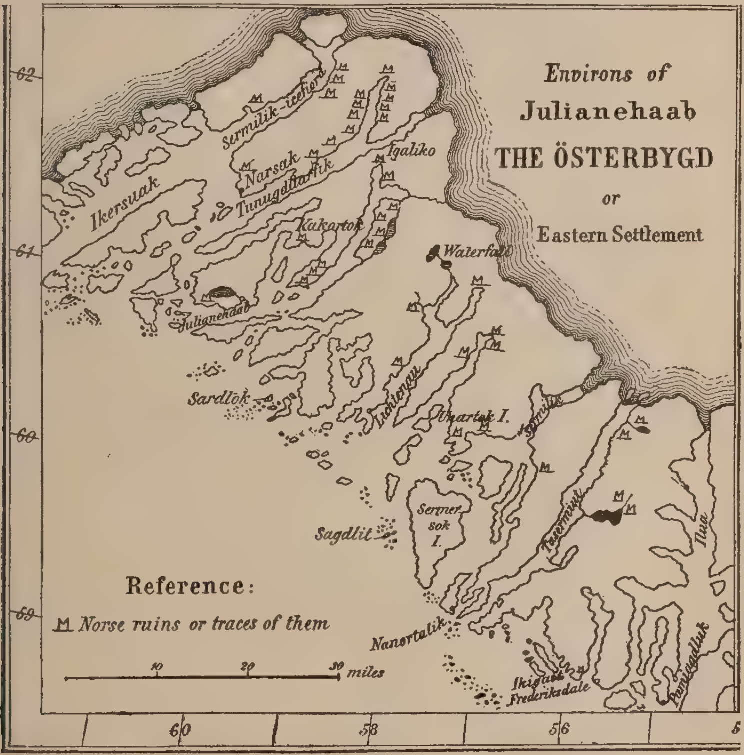
Dasent, in the introduction of Vigfússon's *Icelandic Dictionary*, says of the sagas: "Written at various periods by scribes more or less fitted for the task, they are evidently of very varying authority." The Scandinavian authorities class the sagas as mythical histories, as those relating to Icelandic history (subdivided into general, family, personal, ecclesiastical), and as the lives of rulers.

[4] Anderson's translation, *Lit. of the Scand. North*, p. 81.

[5] Laing (*Heimskringla*, i. 23) says: "Arne Magnussen was the greatest antiquary who never wrote; his judgments and opinions are known from notes, selections, and correspondence, and are of great authority at this day in the saga literature. Torfæus consulted him in his researches."

* After a cut in Nordenskjöld's *Exped. till Grönland*, p. 371, following the *Meddel. om Grönland*, vi. 98.

31,[1] enumerates eight of the early manu-
ripts which mention Vinland and the voyages;
it Rafn, in 1837, counted eighteen such manu-
ripts.[2] We know little or nothing about the
corders or date of any of these copies, except-
g the *Heimskringla*,[3] nor how long they had
isted orally. Some of them were doubtless
it into writing soon after the time when such
cording was introduced, and this date is some-
mes put as early as A. D. 1120, and sometimes
late as the middle or even end of that cen-
ry. Meanwhile, Adam of Bremen, in the
tter part of the eleventh century (A. D. 1073), prepared his *Historia Ecclesiastica*, an account of the spread of Christianity in the north, in which he says he was told by the Danish king that his subjects had found a country to the west, called Winland.[4] A reference is also supposed to be made in the *Historia Ecclesiastica* of Ordericus Vitalis, written about the middle (say A. D. 1140) of the twelfth century. But it was not until somewhere between A. D. 1385 and 1400 that the oldest Icelandic manuscript which exists, touching the voyages, was compiled, — the so-called *Codex Flatoyensis*,[5] though how much earlier copies of it were made is not



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[1] *Mass. Hist. Soc. Proc.*, xviii. 20.

[2] Oswald Moosmüller's *Europäer in Amerika vor Columbus* (Regensburg, 1879, p. 4) enumerates the anuscripts in the royal library in Copenhagen.

[3] A. E. Wollheim's *Die Nat. lit. der Scandinavier* (Berlin, 1875–77), p. 47. Turner's *Anglo Saxons*, book . ch. 1. Mallet's *No. Antiq.* (1847), 393.

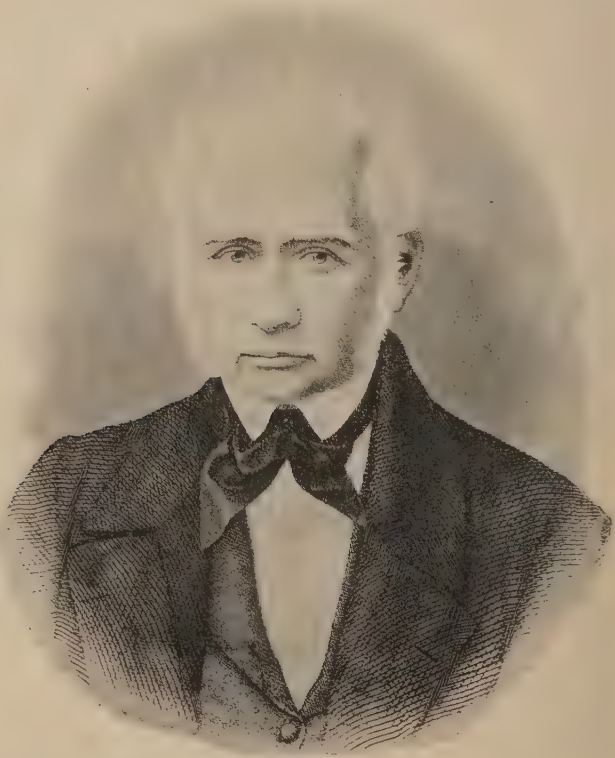
[4] Cf. G. H. Pertz, *Monumenta Germaniæ historica*, 1846, vol. vii. cap. 247. Of the different manuscripts, me call Vinland a "regio" and others an "insula."

[5] Discovered in the seventeenth century in a monastery on an island close by the Icelandic coast, and now

NOTE. — The above is a reproduction of a corner map in the map of *Danish Greenland* given in Rink's ook of that name. The sea in the southwest corner of the cut is not shaded; but shading is given to the terior ice field on the northern and northeastern part of the map. Rink gives a similar map of the Wester-ygd.

known. It is in this manuscript that we find the saga of Olaf Tryggvesson,[1] wherein the voyages of Leif Ericson are described, and it is only by a comparison of circumstances detailed here and in other sagas that the year A. D. 1000 has been approximately determined as the date.[2] In this same codex we find the saga of Eric the Red, one of the chief narratives depended upon by the advocates of the Norse discovery, and i Rask's judgment it "appears to be somewha fabulous, written long after the event, and take from tradition."[3]

The other principal saga is that of Thorfin Karlsefne, which with some differences an with the same lack of authenticity, goes over th ground covered by that of Eric the Red.[4]



RAFN.

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in the royal library in Copenhagen. Cf. Laing's introduction to his edition of the *Heimskringla*, vol. p. 157. Horn says of this codex: "The book was written towards the end of the fourteenth century by tw Icelandic priests, and contains in strange confusion and wholly without criticism a large number of saga poems, and stories. No other manuscript confuses things on so vast a scale." Anderson's translation Horn's *Lit. of the Scandin. North*, p. 60. Cf. *Flateyjarbok. En Samling af Norske Konge-Sagaer me indskudte mindre fortællinger om Begivenheder i og Udenfor Norge samt Annaler* (Christiania, 1860); an Vigfússon's and Unger's edition of 1868, also at Christiania. The best English account of the *Codex Flato ensis* is by Gudbrand Vigfússon in the preface to his *Icelandic Sagas*, published under direction of th Master of the Rolls, London, 1887, vol. i. p. xxv.

[1] For texts, see C. C. Rafn's edition of *Kong Olaf Tryggvesons Saga* (Copenhagen, 1826), and Munch edition of *Kong Olaf Tryggvesön's Saga* (Christiania, 1853). Cf. also P. A. Munch's *Norges Konge-Saga* of Snorri Sturleson, Sturla Thordsson, etc. (Christiania, 1859).

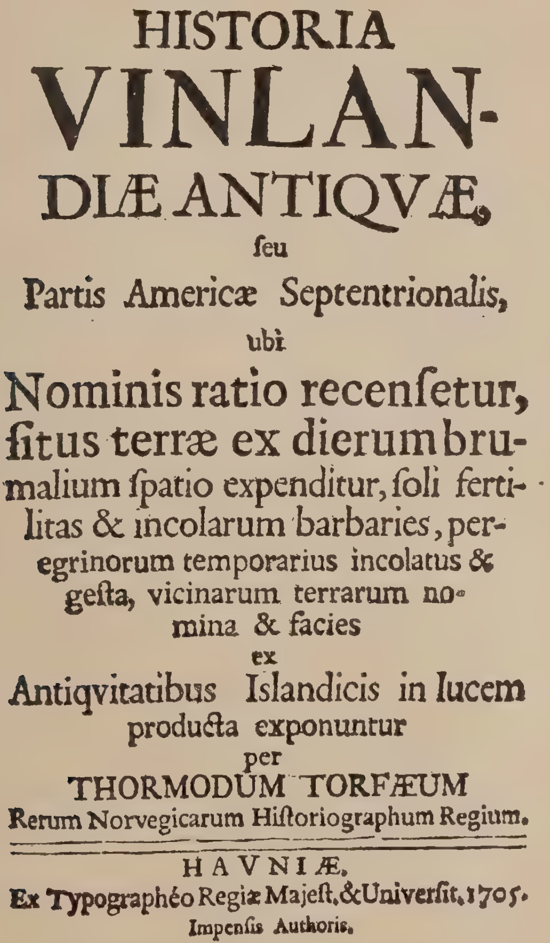
[2] The *Codex Flatoyensis* says that it was sixteen winters after the settlement of Greenland before Leif wer to Norway, and that in the next year he sailed to Vinland.

[3] *Mass. Hist. Soc. Proc.*, xviii. 21.

[4] These sagas are given in Icelandic, Danish, and Latin in Rafn's *Antiquitates Americanæ* (Copenhage

Of all the early manuscripts, the well-known *Heimskringla* of Snorro Sturleson (b. 1178; d. 1241), purporting to be a history of the Norse kings down to A. D. 1177, is the most entitled to be received as an historical record, and all that it says is in these words: "Leif also found Vinland the Good."[1]

Saxo Grammaticus (d. about 1208) in his *His-*



HISTORIA
VINLAN-
DIÆ ANTIQVÆ,
ſeu
Partis Americæ Septentrionalis,
ubi
Nominis ratio recenſetur,
ſitus terræ ex dierum bru-
malium ſpatio expenditur, ſoli ferti-
litas & incolarum barbaries, per-
egrinorum temporarius incolatus &
geſta, vicinarum terrarum no-
mina & facies
ex
Antiqvitatibus Islandicis in lucem
producta exponuntur
per
THORMODUM TORFÆUM
Rerum Norvegicarum Hiſtoriographum Regium.

HAVNIÆ,
Ex Typographéo Regiæ Majeſt.&Univerſit.1705.
Impenſis Authoris.

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37). Versions or abstracts, more or less full, of all or of some of them are given by Beamish, in his *Discov-y of America by the Northmen* (London, 1841), whose text is reprinted by Slafter, in his *Voyages of the orthmen* (Boston, 1877). J. Elliot Cabot, in the *Mass. Quart. Review*, March, 1849, copied in part in igginson's *Amer. Explorers*. Blackwell, in his supplementary chapters to Mallet's *Northern Antiquities* ondon, Bohn's library). B. F. De Costa, in his *Pre-Columbian Discovery of America* (Albany, 1868). ben Norton Horsford, in his *Discovery of America by Norsemen* (Boston, 1888). Beauvois, in his *Décou-rtes des Scandinaves en Amérique* (Paris, 1859). P. E. Müller, in his *Sagabibliothek* (Copenhagen' 16–20), and a German version of part of it by Lachmann, *Sagenbibliothek des Scandinavischen Alterthums Auszügen* (Berlin, 1816).

[1] When, however, Peringskiöld edited the *Heimskringla*, in 1697, he interpolated eight chapters of a more rticular account of the Vinland voyages, which drew forth some animadversions from Torfæus in 1705, when published his *Historia Vinlandiæ*. It was later found that Peringskiöld had drawn these eight chapters

toria Danica begins with myths, and evidently follows the sagas, but does not refer to them except in his preface.[1]

For about five hundred years after this the stories attracted little or no attention.[2] We have seen that Peringskiöld produced these sagas in 1697. Montanus in his *Nieuwe en onbekende Weereld* (Amsterdam, 1671), and Campanius, in 1702, in his *Kort Beskrifning om Provincien Nya Swerige uti America* (Stockholm),[3] gave some details. The account which did most, however, to revive an interest in the subject was that of Torfæus in his *Historia Vinlandiæ Antiquæ* (Copenhagen, 1705), but he was quite content to place the scene of his narrative in America, without attempting to identify localities.[4] The voyages were, a few years later, the subject of a dissertation at the University of Upsala in Sweden.[5] J. P. Cassell, of Bremen, discusses the Adam of Bremen story in another Latin essay, still later.[6]

About 1750, Pieter Kalm, a Swede, brought the matter to the attention of Dr. Franklin, as the latter remembered twenty-five years later, when he wrote to Samuel Mather that "the circumstances gave the account a great appearance of authenticity."[7] In 1755, Paul Henri Mallet (1730–1807), in his *Histoire de Dannemarc*, determines the localities to be Labrador and Newfoundland.[8]

In 1769, Gerhard Schöning, in his *Norges Riges Historie*, established the scene in America. Robertson, in 1777, briefly mentions the voyages in his *Hist. of America* (note xvii.), and, referring to the accounts given by Peringskiöld, calls them rude and confused, and says that it is impossible to identify the landfalls, though he thinks Newfoundland may have been the scene of Vinland. This is also the belief of J. R. Forster in his *Geschichte der Entdeckungen im Norden* (Frankfurt, 1784).[9] M. C. Sprengel, in his *Geschichte der Europäer in Nordamerika* (Leipzig, 1782), thinks they went as far south as Carolina. Pontoppidan's *History of Norway* was mainly followed by Dr. Jeremy Belknap in his *American Biography* (Boston, 1794), who recognizes "circumstances to confirm and none to disprove the relations." In 1793, Muñoz, in his *Historia del Nuevo Mundo*, put Vinland in Greenland. In 1796 there was a brief account

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from the *Codex Flatoyensis*, which particular MS. was unknown to Torfæus. When Laing printed his edition of the *Heimskringla*, *The Sea Kings of Norway* (London, 1844), he translated these eight chapters in his appendix (vol. iii. 344). Laing (*Heimskringla*, i. 27) says: "Snorro Sturleson has done for the history of the Northmen what Livy did for the history of the Romans," — a rather questionable tribute to the verity of the saga history, in the light of the most approved comments on Livy. Cf. Horn, in Anderson's translation, *Lit. of the Scandinavian North* (Chicago, 1884), p. 56, with references, p. 59.

[1] J. Fulford Vicary's *Saga Time* (Lond., 1887). Some time in the fifteenth century, a monk, Thomas Gheysmer, made an abridgment of Saxo, alleging that he "had said much rather for the sake of adornment than in behalf of truth." The Canon Christiern Pederson printed the first edition of Saxo at Paris in 1514 (Anderson's Horn's *Lit. Scandin. North*, p. 102). This writer adds: "The entire work rests exclusively on oral tradition, which had been gathered by Saxo, and which he repeated precisely as he had heard it, for in the whole chronicle there is no trace of criticism proper. . . . Saxo must also undoubtedly have had Icelandic sagamen as authorities for the legendary part of his work; but there is not the slightest evidence to show that he ever had a written Icelandic saga before him. . . . In this part of the work he betrays no effort to separate fact from fiction, . . . and he has in many instances consciously or unconsciously adorned the original material." Horn adds that the last and best edition is that of P. E. Müller and J. Velchow, *Saxonis Grammatici Historia Danica* (Copenhagen, 1839).

[2] Humboldt (*Crit. Exam.*, ii. 120) represented that Ortelius referred to these voyages in 1570; but Palfrey (*Hist. New England*, i. 51) shows that the language cited by Humboldt was not used by Ortelius till in his edition of 1592, and that then he referred to the Zeno narrative.

[3] See *post*, Vol. IV. p. 492.

[4] His account is followed by Malte Brun in his *Précis de la Géographie* (i. 395). Cf. also *Annales des Voyages* (Paris, 1810), x. 50, and his *Géographie Universelle* (Paris, 1841). Pinkerton, in his *Voyages* (London, 1814), vol. xvii., also followed Torfæus.

[5] J. J. Wahlstedt's *Iter in Americam* (Upsala, 1725). Cf. *Brinley Catal.*, i. 59.

[6] *Observatio historica ad Frisonum navigatione fortuita in Americam sec. xi. facta* (Magdeburg, 1741).

[7] *Franklin's Works*, Philad., 1809, vol. vi.; Sparks's ed., viii. 69.

[8] This is the book which furnished the text in an English dress (London, 1770) known as *Northern Antiquities*, and a part of his account is given in the *American Museum* (Philad., 1789). In the Edinburgh edition of 1809 it is called: *Northern antiquities: or a description of the manners, customs, religion and laws, of the ancient Danes, including those of our Saxon ancestors. With a translation of the Edda and other pieces, from the ancient Icelandic tongue. Translated from "L'introduction à l'histoire de Dannemarc, &c.," par Mons. Mallet. With additional notes by the English translator* [*Bishop Percy*], *and Goranson's Latin version of the Edda.* In 2 vols. The chapters defining the locations are omitted, and others substituted, in the reprint of the *Northern Antiquities* in Bohn's library.

[9] There are French and English versions.

in Fritsch's *Disputatio historico-geographica in qua quæritur utrum veteres Americam noverint necne.* H. Stenström published at Lund, in 1801, a short dissertation, *De America Norvegis ante tempora Columbi adita.* Boucher de la Richarderie, in his *Bibliothèque Universelle des Voyages* (Paris, 1808), gives a short account, and cites some of the authorities. Some of the earlier American histories of this century, like Williamson's *North Carolina*, took advantage of the recitals of Torfæus and Mallet. Ebenezer Henderson's *Residence in Iceland* (1814–15)[1] presented the evidence anew. Barrow, in his *Voyages to the Arctic Regions* (London, 1818), places Vinland in Labrador or Newfoundland; but J. W. Moulton, in his *History of the State of New York* (N. Y., 1824), brings that State within the region supposed to have been visited.

A writer more likely to cause a determinate opinion in the public mind came in Washington Irving, who in his *Columbus* (London, 1828) dismissed the accounts as untrustworthy; though later, under the influence of Wheaton and Rafn, he was inclined to consider them of possible importance; and finally in his condensed edition he thinks the facts "established to the conviction of most minds."[2] Hugh Murray, in his *Discoveries and Travels in North America* (London, 1829), regards the sagas as an authority; but he doubts the assigning of Vinland to America. In 1830, W. D. Cooley, in his *History of Maritime and Inland Discovery*,[3] thought it impossible to shake the authenticity of the sagas.

While Henry Wheaton was the minister of the United States at Copenhagen, and having access to the collections of that city, he prepared his *History of the Northmen*, which was published in London and Philadelphia in 1831.[4] The high character of the man gave unusual force to his opinions, and his epitome of the sagas in his second chapter contributed much to increase the interest in the Northmen story. He was the first who much impressed the New England antiquaries with the view that Vinland should be looked for in New England; and a French version by Paul Guillot, issued in Paris in 1844, is stated to have been "revue et augmentée par l'auteur, avec cartes, inscriptions, et alphabet runique."[5] The opinions of Wheaton, however, had no effect upon the leading historian of the United States, nor have any subsequent developments caused any change in the opinion of Bancroft, first advanced in 1834, in the opening volume of his *United States*, where he dismissed the sagas as "mythological in form and obscure in meaning; ancient yet not contemporary." He adds that "the intrepid mariners who colonized Greenland could easily have extended their voyage to Labrador; but no clear historical evidence establishes the natural probability that they accomplished the passage."[6] All this is omitted by Bancroft in his last revised edition; but a paragraph in his original third volume (1840), to the intent that, though "Scandinavians may have reached the shores of Labrador, the soil of the United States has not one vestige of their presence," is allowed to remain,[7] and is true now as when first written.

The chief apostle of the Norseman belief, however, is Carl Christian Rafn, whose work was accomplished under the auspices of the Royal Society of Northern Antiquaries at Copenhagen.[8]

Rafn was born in 1795, and died at Copenhagen in 1864.[9] At the University, as well as later as an officer of its library, he had bent his attention to the early Norse manuscripts and literature,[10] so that in 1825 he was the natural founder of the Royal Society of Northern Antiquaries; and much of the value of its long series of publications is due to his active and unflagging interest.[1] The summit of his American interest, however, was reached in the great folio *Antiquitates Americanæ*,[2] in which he for the first time put the mass of original Norse documents before the student, and with a larger accumulation of proofs than had ever been adduced before, he commented on the narratives and came to conclusions respecting traces of their occupancy to which few will adhere to-day.

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[1] Edinburgh, 1818; Boston, 1831.

[2] *Mass. Hist. Soc. Proc.*, 1865, p. 184.

[3] *Lardner's Cabinet Cyclopædia.*

[4] Allibone, iii. 2667.

[5] Irving, in reviewing the book in the *No. Am. Rev.*, Oct., 1832, avoided the question of the Norse discovery. (Cf. his *Spanish Papers*, vol. ii., and Rice's *Essays from the No. Am. Rev.*) C. Robinson, in his *Discoveries in the West* (ch. 1), borrows from Wheaton.

[6] Octavo ed., i. pp. 5, 6.

[7] Orig. ed., iii. 313; last revision, ii. 132.

[8] This society, Kongelige Nordiske Oldskrift-Selskab, since 1825, has been issuing works and periodicals llustrating all departments of Scandinavian archæology (cf. Webb, in *Mass. Hist. Soc. Proc.*, viii. 177), and has gathered cabinets and museums, sections of which are devoted to American subjects. C. C. Rafn's *Cabinet d'antiquités Américaines à Copenhague* (Copenhagen, 1858); *Journal of the Royal Geographical Society*, xiv. 316; Slafter's introd. to his *Voyages of the Northmen.*

[9] *Mass. Hist. Soc. Proc.*, viii. 81; *Am. Antiq. Soc. Proc.*, April, 1865; *N. E. Hist. Geneal. Reg.*, 1865, p. 273; *Today*, ii. 176.

[10] Professor Willard Fiske has paid particular attention to the early forms of the Danish in the Icelandic iterature. In 1885 the British Museum issued a *Catalogue of the books printed in Iceland from A. D. 1578 to 1880 in the library of the British Museum.* In 1886 Mr. Fiske privately printed at Florence *Bibliographical Notices, i.: Books printed in Iceland, 1578–1844, a supplement to the British Museum Catalogue,*

The effect of Rafn's volume, however, was marked, and we see it in the numerous presentations of the subject which followed; and every writer since has been greatly indebted to him.

Alexander von Humboldt in his *Examen Critique* (Paris, 1837) gave a synopsis of the sagas, and believed the scene of the discoveries to be between Newfoundland and New York; and in

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which enumerates 139 titles with full bibliographical detail and an index. He refers also to the principal bibliographical authorities. Laing's introduction to the *Heimskringla* gives a survey.

[1] Cf. list of their several issues in Scudder's *Catal. of Scient. Serials*, nos. 640, 654, and the Rafn bibliography in Sabin, xvi. nos. 67,460–67,486. In addition to its Danish publications, the chief of which interesting to the American archæologist being the *Antiquarisk Tidsskrift* (1845–1864), sometimes known as the *Revue Archéologique et Bulletin*, the society, under its more familiar name of Société Royale des Antiquaires du Nord, has issued its *Mémoires*, the first series running from 1836 to 1860, in 4 vols.. and the second beginning in 1866. These contain numerous papers involving the discussion of the Northmen voyages, including a condensed narrative by Rafn, "Mémoire sur la découverte de l'Amérique au 10e siècle," which was enlarged and frequently issued separately in French and other languages (1838–1843), and is sometimes found in English as a *Supplement to the Antiquitates Americanæ*, and was issued in New York (1838) as *America discovered in the tenth century*. In this form (*Mass. Hist. Soc. Proc.*, viii. 187) it was widely used here and in Europe to call attention to Rafn's folio, *Antiquitates Americanæ*.

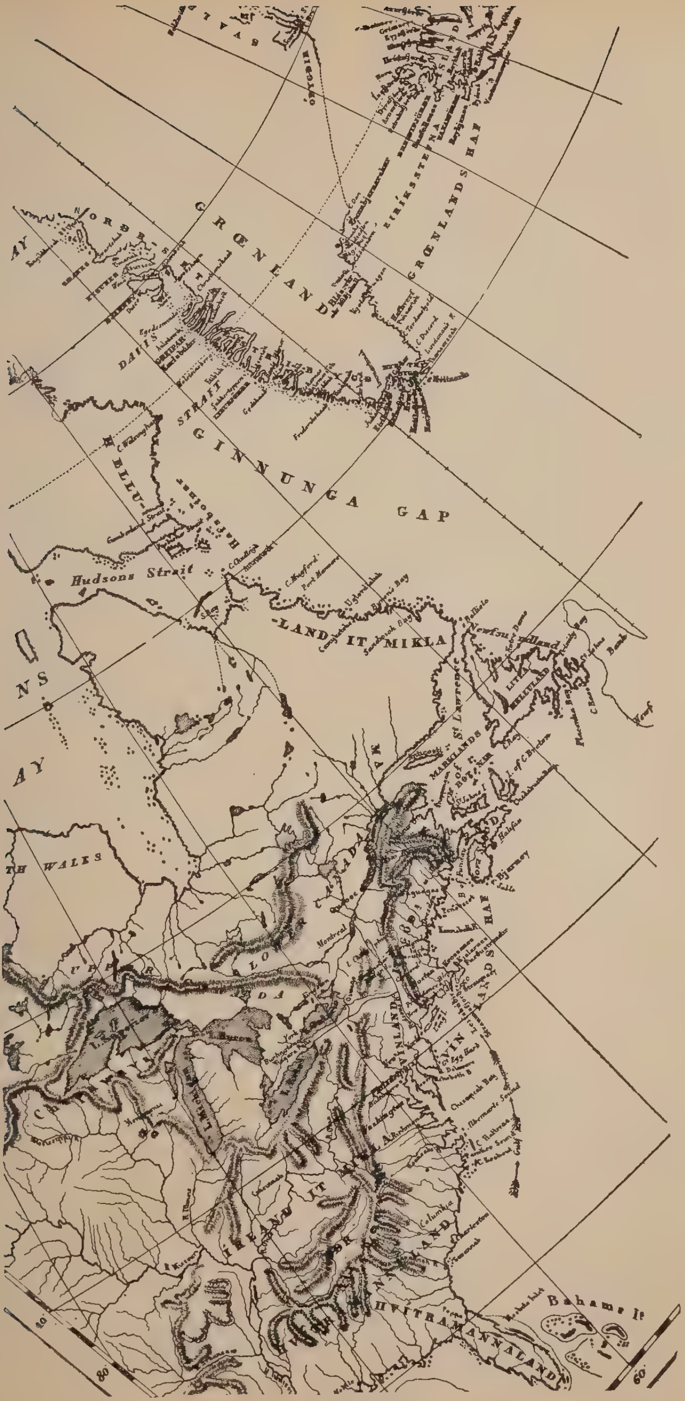
The *Mémoires* also contained another paper by Rafn, *Aperçu de l'ancienne géographie des régions arctiques de l'Amérique, selon les rapports contenus dans les Sagas du Nord* (Copenhagen, 1847), which also concerns the Vinland voyages, and is repeated in the *Nouvelles Annales des Voyages* (1849), i. 277.

[2] *Antiqvitates Americanæ sive scriptores septentrionales rerum ante-Columbianarum in America. Samling af de i nordens oldskrifter indeholdte efterretninger om de gamle nordboers opdagelsesreiser til America fra det 10de til det 14de aarhundrede. Edidit Societas regia antiquariorum Septentrionalium* (Hafniæ, 1837). CONTENTS: Præfatio. — Conspectus codicum membraneorum, in quibus terrarum Americanarum mentio fit. — America discovered by the Scandinavians in the tenth century. (An abstract of the historical evidence contained in this work.) — Pættir af Eireki Rauda ok Grænlendingum. — Saga Porfinns Karlsefnis ok Snorra Porbrandssonar. — Breviores relationes: De inhabitatione Islandiæ; De inhabitatione Grœnlandiæ; De Ario Maris filio; De Björne Breidvikensium athleta; De Gudleivo Gudlœgi filio; Excerpta ex annalibus Islandorum; Die mansione Grœnlandorum in locis Borealibus; Excerpta e geographicis scriptis veterum Islandorum: Carmen Færöicum, in quo Vinlandiæ mentio fit; Adami Bremensis Relatio de Vinlandia; Descriptio quorumdam monumentorum Europæorum, quæ in oris Grönlandiæ ocidentalibus reperta et detecta sunt; Descriptio vetusti monumenti in regione Massachusetts reperti; Descriptio vetustorum quorundam monumentorum in Rhode Island. — Annotationes geographicæ; Islandia et Grönlandia; Indagatio Arctoarum Americæ regionum. — Indagatio Orientalium Americæ regionum. — Addenda et emendanda. — Indexes. The larger works are in Icelandic, Danish, and Latin.

Cf. also his *Antiquités Américaines d'après les monuments historiques des Islandais et des anciens Scandinaves* (Copenhagen, 1845). An abstract of the evidence is given in the *Journal of the Royal Geographical Society* (viii. 114), and it is upon this that H. H. Bancroft depends in his *Native Races* (v. 106). Cf. also *Ibid.* v. 115–116; and his *Cent. America*, i. 74. L. Dussieux in his *Les Grands Faits de l'Histoire de la Géographie* (Paris, 1882; vol. i. 147, 165) follows Rafn and Malte-Brun. So does Brasseur de Bourbourg in his *Hist. de Nations Civilisées*, i. 18; and Bachiller y Morales in his *Antigüedades Americanas* (Havana, 1845).

Great efforts were made by Rafn and his friends to get reviews of his folio in American periodicals; and he relied in this matter upon Dr. Webb and others, with whom he had been in correspondence in working up his geographical details (*Mass. Hist. Soc. Proc.*, ii. 97, 107; viii. 189, etc.), and so late as 1852 he drafted in English a new synopsis of the evidence, and sent it over for distribution in the United States (*Ibid.* ii. 500; *New Jersey Hist. Soc. Proc.*, vi.; *N. E. Hist. Geneal. Reg.*, 1853, p. 13). So far as weight of character went, there was a plenty of it in his reviewers: Edward Everett in the *No. Amer. Rev.*, Jan., 1838; Alexander

* Opposite is a section of Rafn's map in the *Antiquitates Americanæ*, giving his identification of the Norse localities. This and the other map by Rafn is reproduced in his *Cabinet d'Antiquités Américaines* (Copenhagen, 1858). The map in the atlas of St. Martin's *Hist. de la Géographie* does not track them below Newfoundland. The map in J. T. Smith's *Northmen in New England* (Boston, 1839) shows eleven voyages to America from Scandinavia, A. D. 861–1285. Cf. map in Wilhelmi's *Island*, etc. (Heidelberg, 1842).



NORSE AMERICA.

his *Cosmos* (1844) he reiterated his views, holding to "the undoubted first discovery by the Northmen as far south as 41° 30′."[1]

Two books which for a while were the popular treatises on the subject were the immediate outcome of Rafn's book. The first of these was *The Northmen in New England*, giving the stories in the form of a dialogue, by Joshua Toulmin Smith (Boston, 1839), which in a second edition (London, 1842) was called *The Discovery of America by the Northmen in the Tenth Century*.

The other book was largely an English version of parts of Rafn's book, translating the chief sagas, and reproducing the maps: Nathaniel Ludlow Beamish's *Discovery of America by the Northmen in the Tenth Century* (London, 1841).[2] Two German books owed almost as much to Rafn, those of K. Wilhelmi[3] and K. H. Hermes.[4] Prescott, at this time publishing the third volume of his *Mexico* (1843), accords to Rafn the credit of taking the matter out of the category of doubt, but he hesitates to accept the Dane's identifications of localities; but R. H. Major, in considering the question in the introduction to his *Select letters of Columbus* (1847), finds little hesitation in accepting the views of Rafn, and thinks "no room is left for disputing the main fact of discovery."

When Hildreth, in 1849, published his *United States*, he ranged himself, with his distrusts, by the side of Bancroft but J. Elliot Cabot, in making a capital summary of the evidence in the *Mass. Quarterly Review* (vol. ii.), accords with the believers, but places the locality visited about Labrador and Newfoundland. Haven in his *Archæology of the United States* (Washington, 1856) regards the discovery as well attested, and that the region was most likely that of Narragansett Bay. C. W. Elliott in his *New England History* (N. Y., 1857) holds the story to be "in some degree mythical." Palfrey in his *Hist. of New England* (Boston, 1858) goes no farther than to consider the Norse voyage as in "nowise unlikely," and Oscar F. Peschel in his *Geschichte des Zeitalters der Entdeckungen* (Stuttgart, 1858) is on the affirmative side. Paul K. Sinding goes over the story with assent in his *History of Scandinavia*, — a book not much changed in his *Scandinavian Races* (N. Y., 1878).[5] Eugène Beauvois did little more than translate from Rafn in his *Découvertes des Scandinaves en*

Everett in the *U. S. Magazine* and *Democratic Review* (1838); George Folsom in the *N. Y. Review* (1838); H. R. Schoolcraft in the *Amer. Biblical Repository* (1839). Cf. *Mass. Hist. Soc. Proc.*, viii. 182–3; *Poole's Index*, 28, 928.

[1] Bohn's ed., English transl., ii. 603; Lond. ed., 1849, ii. 233–36. Humboldt expresses the opinion that Columbus, during his visit to Iceland, got no knowledge of the stories, so little an impression had they made on the public mind (*Cosmos*, Bohn, ii. 611), and that the enemies of Columbus in his famous lawsuit, when every effort was made to discredit his enterprise, did not instance his Iceland experience, should be held to indicate that no one in southern Europe believed in any such prompting at that time. Wheaton and Prescott (*Ferdinand and Isabella*, orig. ed., ii. 118, 131) hold similar opinions. (Cf. Vol. II. p. 33.) Dr. Webb says that Irving held back from accepting the stories of the saga, for fear that they could be used to detract from Columbus' fame. Rafn and his immediate sympathizers did not fail to make the most of the supposition that Columbus had in some way profited by his Iceland experience. Laing thinks Columbus *must* have heard of the voyages, and De Costa (*Columbus and the Geographers of the North*) thinks that the bruit of the Northmen voyages extended sufficiently over Europe to render it unlikely that it escaped the ears of Columbus. Cf. further an appendix in Irving's *Columbus*, and Mallet's *Northern Antiquities*, Bohn's ed., 267, in refutation of the conclusions of Finn Magnusen in the *Nordisk Tidsskrift*. It has been left for the unwise and overtopped advocates of a later day, like Goodrich and Marie A. Brown, to go beyond reason in an indiscriminate denunciation of the Genoese. The latter writer, in her *Icelandic Discoverers of America* (Boston, 1888), rambles over the subject in a jejune way, and easily falls into errors, while she pursues her main purpose of exposing what she fancies to be a deep-laid scheme of the Pope and the Catholic Church to conceal the merits of the Northmen and to capture the sympathies of Americans in honoring the memory of Columbus in 1892. It is simply a reactionary craze from the overdone raptures of the school of Roselly de Lorgues and the other advocates of the canonization of Columbus, in Catholic Europe.

[2] This book is for the sagas the basis of the most useful book on the subject, Edmund Farwell Slafter's *Voyages of the Northmen to America. Including extracts from Icelandic Sagas relating to Western voyages by Northmen in the 10th and 11th centuries in an English translation by Nathaniel Ludlow Beamish; with a synopsis of the historical evidence and the opinion of professor Rafn as to the places visited by the Scandinavians on the coast of America. With an introduction* (Boston, 1877), published by the Prince Society. Slafter's opinion is that the narratives are "true in their general outlines and important features."

[3] *Island, Huitramannaland, Grönland und Vinland* (Heidelberg, 1842).

[4] *Die Entdeckung von Amerika durch die Isländer im zehnten und eilften Jahrhundert* (Braunschweig, 1844). Cf. E. G. Squier's *Discovery of America by the Northmen, a critical review of the works of Hermes, Rafn and Beamish* (1849).

[5] Cf. his paper in the *Quebec Lit. and Hist. Soc. Trans.*, 1865.

nérique, — fragments de Sagas Islandaises uduits pour la première fois en français (Paris, 59) — an extract from the *Revue Orientale et néricaine* (vol. ii.).[1]

Professor Daniel Wilson, of Toronto, has dis- ssed the subject at different times, and with ese conclusions: "With all reasonable doubts to the accuracy of details, there is the strong- t probability in favor of the authenticity of the nerican Vinland. . . . The data are the mere gue allusions of a traveller's tale, and it is deed the most unsatisfactory feature of the gas that the later the voyages the more con- sed and inconsistent their narratives become every point of detail."[2]

Dr. B. F. De Costa's first book on the subject as his *Pre-Columbian Discovery of America by e Northmen, illustrated by Translations from e Icelandic Sagas, edited with notes and a gen- al introduction* (Albany, 1868). It is a con- nient gathering of the essential parts of the gas; but the introduction rather opposes than sproves some of the "feeble paragraphs, ointed with a sneer," which he charges upon ading opponents of the faith. Professor J. L. iman, in the *North American Review* (July, 69), made De Costa's book the occasion of an say setting forth the grounds of a disbelief in e historical value of the sagas. De Costa plied in *Notes on a Review*, etc. (Charlestown, 69). In the same year, Dr. Kohl, following e identifications of Rafn, rehearsed the narra- ves in his *Discovery of Maine* (Portland, 1869), d tracked Karlsefne through the gulf of aine. De Costa took issue with him on this tter point in his *Northmen in Maine* (Albany, 70).[3] In the introduction to his *Sailing Di- ctions of Henry Hudson*, De Costa argues that ese mariners' guides are the same used by the Northmen, and in his *Columbus and the Geographers of the North* (Hartford, 1872, — cf. *Amer. Church Review*, xxiv. 418) he recapitulates the sagas once more with reference to the knowledge which he supposes Columbus to have had of them. Paul Gaffarel, in his *Etudes sur les rapports de l'Amérique et de l'ancien Continent avant Colomb* (Paris, 1869), entered more particularly into the evidence of the commerce of Vinland and its relations to Europe.

Gabriel Gravier, another French author, was rather too credulous in his *Découverte de l'Amérique par les normands au Xe Siècle* (Paris, 1874), when he assumed with as much confidence as Rafn ever did everything that the most ardent advocate had sought to prove.[4]

There were two American writers soon to follow, hardly less intemperate. These were Aaron Goodrich, in *A History of the Character and Achievements of the so-called Christopher Columbus* (N. Y., 1874), who took the full complement of Rafn's belief with no hesitancy; and Rasmus B. Anderson in his *America not discovered by Columbus* (Chicago, 1874; improved, 1877; again with Watson's bibliography, 1883),[5] in which even the Skeleton in Armor is made to play a part. Excluding such vagaries, the book is not without use as displaying the excessive views entertained in some quarters on the subject. The author is, we believe, a Scandinavian, and shows the tendency of his race to a facility rather than felicity in accepting evidence on this subject.

The narratives were first detailed among our leading general histories when the *Popular History of the United States* of Bryant and Gay appeared in 1876. The claims were presented decidedly, and in the main in the directions indicated by Rafn; but the wildest pretensions of that antiquary were considerately dismissed.

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[1] Beauvois also made at a later period other contributions to the subject: *Les derniers vestiges du Chris- anisme prêchés du Xe au XIVe siècles dans le Markland et le Grande-Irlande, les porte-croix de la aspésie et de l'Arcadie* (Paris, 1877) which appeared originally in the *Annales de philosophie Chrétiennes*, pr., 1877; and *Les Colonies européennes du Markland et de l'Escociland au XIVe siècle et les vestiges qui subsistèrent jusqu'aux XVIe et XVIIe siècle* (Luxembourg, 1878), being taken from the *Compte Rendu* the Luxembourg meeting of the Congrès des Américanistes.

[2] *Prehistoric Man*, 3d ed., ii. 83, 85. Cf. also his *Historic Footprints in America*, extracted from the *anadian Journal*, Sept., 1864.

[3] Joseph Williamson, in the *Hist. Mag.*, Jan., 1869 (x. 30), sought to connect with the Northmen certain ncient remains along the coast of Maine.

[4] He was rather caustically taken to account by Henry Cabot Lodge, in the *No. Am. Review*, vol. cxix. f. Michel Hardy's *Les Scandinaves dans l'Amérique du Nord* (Dieppe, 1874). An April hoax which ppeared in a Washington paper in 1867, about some runes discovered on the Potomac, had been promptly xposed in this country (*Hist. Mag.*, Mar. and Aug., 1869), but it had been accepted as true in the *Annuaire de Société Américaine* in 1873, and Gaffarel (*Etudes sur les Rapports de l'Amérique avant Columbus*, Paris, 69, p. 251) and Gravier (p. 139) was drawn into the snare. (Cf. Whittlesey's *Archæol. frauds* in the *West- n Reserve Hist. Soc. Tracts*, no. 9, and H. W. Haynes in *Mass. Hist. Soc. Proc.*, Jan., 1888, p. 59.) In a ter monograph, *Les Normands sur la route des Indes* (Rouen, 1880), Gravier, while still accepting the old xploded geographical theories, undertook further to prove that the bruits of the Norse discoveries instigated e seamen of Normandy to similar ventures, and that they visited America in ante-Columbian days.

[5] There is an authorized German version, *Die erste Entdeckung von Amerika*, by Mathilde Mann (Hamurg, 1888).

During the last score years the subject has been often made prominent by travellers like Kneeland[1] and Hayes,[2] who have recapitulated the evidence; by lecturers like Charles Kingsley;[3] by monographists like Moosmüller;[4] by the minor historians like Higginson,[5] who has none of the fervor of the inspired identifiers of localities, and Weise,[6] who is inclined to believe the sea-rovers did not even pass Davis's Straits; and by contributors to the successive sessions of the Congrès des Américanistes[7] and to other learned societies.[8]

The question was brought to a practical issue in Massachusetts by a proposition raised — at first in Wisconsin — by the well-known musician Ole Bull, to erect in Boston a statue to Leif Ericson.[9] The project, though ultimately carried out, was long delayed, and was discouraged by members of the Massachusetts Historical Society on the ground that no satisfactory evidence existed to show that any spot in New England had been reached by the Northmen.[10] The sense of the society was finally expressed in the report of their committee, Henry W. Haynes and Abner C. Goodell, Jr., in language which seems to be the result of the best historical criticism; for it is not a question of the fact of discovery, but to decide how far we can place reliance on the details of the sagas. There is likely to remain a difference of opinion on this point. The committee say: "There is the same sort of reason for believing in the existence of Leif Ericson that there is for believing in the existence of Agamemnon, — they are both traditions accepted by later writers; but there is no more reason for regarding as true the details related about his discoveries than there is for accepting as historic truth the narratives contained in the Homeric poems. It is antecedently probable that the Northmen discovered America in the early part of the eleventh century; and this discovery is confirmed by the same sort of historical tradition, not strong enough to be called evidence, upon which our belief in many of the accepted facts of history rests."[11]

In running down the history of the literature of the subject, the present aim has been simply to pick out such contributions as have been in some way significant, and reference must be made to the bibliographies for a more perfect record.[12]

Irrespective of the natural probability of the Northmen visits to the American main, other evidence has been often adduced to support the sagas. This proof has been linguistic, ethno logical, physical, geographical, and monumental.

Nothing could be slenderer than the alleged correspondences of languages, and we can see in Horsford's *Discovery of America by Northmen* to what a fanciful extent a confident enthusiasm can carry it.[13]

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[1] *American in Iceland* (Boston, 1876).

[2] *Land of Desolation* (New York, 1872). There is a French version in the *Tour du Monde*, xxvi.

[3] *Lectures delivered in America* (Philad., 1875), — third lecture.

[4] *Europäer in Amerika vor Columbus, nach Quellen bearbeitet von P. Oswald Moosmüller* (Regensburg 1879).

[5] *Larger History of the United States* (N. Y., 1886).

[6] *Discoveries of America* (N. Y., 1884).

[7] Particularly Beauvois, already mentioned, and Dr. E. Löffler, on the Vinland Excursions of the Ancien Scandinavians, at the Copenhagen meeting, *Compte Rendu* (1883), p. 64. Cf. also Michel Hardy's *Le Scandinaves dans l'Amérique du Nord au Xe Siècle* (Dieppe, 1874).

[8] R. G. Haliburton, in *Roy. Geog. Soc. Proc.* (Jan., 1885); Thomas Morgan, in *Roy. Hist. Soc. Trans* iii. 75.

[9] E. N. Horsford's *Discovery of America by the Northmen* (Boston, 1888); Anderson's *America not discovered by Columbus*, 3d ed., p. 30; *N. Y. Nation*, Nov. 17, 1887; *Mag. Amer. Hist.*, Mar., 1888, p. 223.

[10] Remarks of Wm. Everett and Chas. Deane in the society's *Proceedings*, May, 1880.

[11] *Mass. Hist. Soc. Proc.*, Dec., 1887. The most incautious linguistic inferences and the most uncritica cartological perversions are presented by Eben Norton Horsford in his *Discovery of America by the Northmen — address at the unveiling of the statue of Leif Eriksen, Oct. 29, 1887* (Boston, 1888). Cf. Osca Brenner in *Beilage zur Allgemeinen Zeitung* (Munich, Dec. 6, 1888). A trustful reliance upon the reputations of those who have in greater or less degree accepted the details of the sagas characterizes a paper b Mrs. Ole Bull in the *Mag. of Amer. Hist.*, Mar., 1888. She is naturally not inclined to make much allowanc for the patriotic zeal of the northern writers.

[12] The best list is in P. B. Watson's "Bibliog. of Pre-Columbian Discoveries of America," originally in th *Library Journal*, vi. 259, but more complete in Anderson's *America not discovered by Columbus* (3d ed Chicago, 1883). Cf. also Chavanne's *Literature of the Polar Regions*; Th. Solberg's Bibliog. of Scandinavia in English, with magazine articles, in F. W. Horn's *Hist. of the lit. of the Scandinavian North* (1884, pp 413-500). There is a convenient brief list in Slafter's *Voyages of the Northmen* (pp. 127-140), and a no very well selected one in Marie A. Brown's *Icelandic Discoverers*. *Poole's Index* indicates the considerabl amount of periodical discussions. The Scandinavian writers are mainly referred to by Miss Brown and Mrs Bull.

[13] Forster finds a corruption of Norvegia (Norway) in Norumbega. Rafn finds the Norse elements in th

The ethnological traces are only less shadowy. Hugo Grotius[1] contended that the people of Central America were of Scandinavian descent. Brasseur found remnants of Norse civilization in the same region.[2] Viollet le Duc[3] discovers great resemblances in the northern religious ceremonials to those described in the *Popul Vuh*. A general resemblance did not escape the notice of Humboldt. Gravier[4] is certain that the Aztec civilization is Norse.[5] Chas. Godfrey Leland claims that the old Norse spirit pervades the myths and legends of the Algonkins, and that it is impossible not to admit that there must have been at one time "extensive intercourse between the Northmen and the Algonkins;" and in proof he points out resemblances between the Eddas and the Algonkin mythology.[6] It is even stated that the Micmacs have a tradition of a people called Chenooks, who in ships visited their coast in the tenth century.

The physical and geographical evidences are held to exist in the correspondences of the coast line to the descriptions of the sagas, including the phenomena of the tides[7] and the length of the summer day.[8] Laing and others, who make no question of the main fact, readily recognize the too great generality and contradictions of the descriptions to be relied upon.[9]

George Bancroft, in showing his distrust, has said that the advocates of identification can no

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words Massachusetts, Nauset, and Mount Hope (*Mass. Hist. Soc. Proc.*, viii. 194–198). The word Hole, used as synonymous to harbor in various localities along the Vineyard Sound, has been called a relic of the Icelandic Holl, a hill (*Mag. Amer. Hist.*, June, 1882, p. 431; Jos. S. Fay in *Mass. Hist. Soc. Proc.*, xii. 334; and in Anderson, *America not discovered by Columbus*, 3d ed.).

Brasseur de Bourbourg in his *Nations civilisées du Méxique*, and more emphatically in his *Grammaire Quichée*, had indicated what he thought a northern incursion before Leif, in certain seeming similarities to the northern tongues of those of Guatemala. Cf. also *Nouv. Annales des Voyages*, 6th ser., xvi. 263; *N. Y. Tribune*, Nov. 21, 1855; Bancroft's *Native Races*, iii. 762.

[1] *De origine gentium Americanarum* (1642).

[2] *Nouv. Ann. des Voyages*, 6th ser., vols. iii. and vi.

[3] In Charnay's *Ruines*, etc. (Paris, 1867).

[4] *Découverte de l'America par les Normands* (Paris, 1864).

[5] H. H. Bancroft, *Nat. Races*, v. 115–16, gives references on the peopling of America from the northwest of Europe.

[6] *Trans. Roy. Soc. Lit.*, xiv. 1887; also printed separately as *Mythology, legends and Folk-lore of the Algonquins*. Cf. also his *Algonquin Legends of New England* (1885). Cf. D. G. Brinton in *Amer. Antiquarian*, May, 1885.

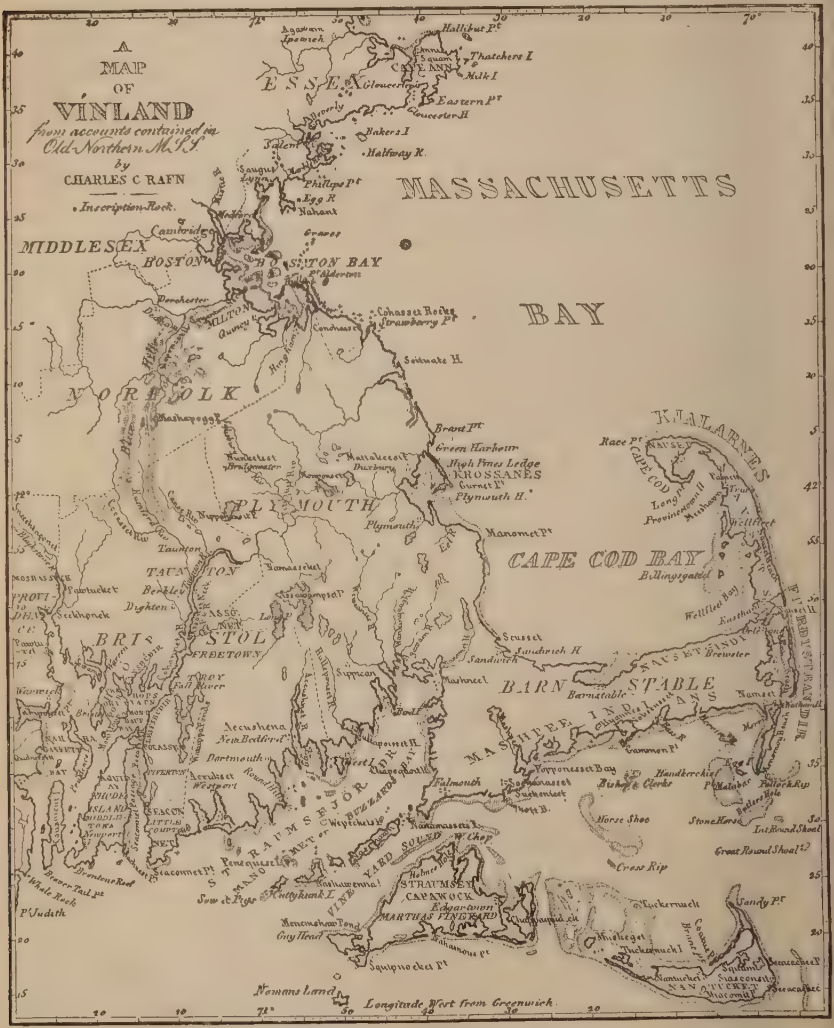
[7] Mr. Mitchell, of the U. S. Coast Survey, has attended to this part of the subject, and Horsford (p. 28) quotes his MS. He finds on the Massachusetts coast what he thinks a sufficient correspondence to the description of the sagas.

[8] So plain a matter as the length of the longest summer day would indubitably point to an absolute parallel of latitude as determining the site of Vinland, if there was no doubt in the language of the saga. Unfortunately there is a wide divergence of opinion in the meaning of the words to be depended upon, even among Icelandic scholars; and the later writers among them assert that Rafn (*Antiq. Amer.* 436) and Magnusen in interpreting the language to confirm their theory of the Rhode Island bays have misconceived. Their argument is summarized in the French version of Wheaton. John M'Caul translated Finn Magnusen's "Ancient Scandinavian divisions of the times of day," in the *Mémoire de la Soc. Roy. des Antiq. du Nord* (1836–37). Rask disputes Rafn's deductions (*Mass. Hist. Soc. Proc.*, xviii. 22). Torfæus. who is our best commentator after all, says it meant Newfoundland. Robertson put it at 58° north. Dahlmann in his *Forschungen* (vol. i.) places it on the coast of Labrador. Horsford (p. 66) at some length admits no question that it must have been between 41° and 43° north. Cf. Laing's *Heimskringla*, i. 173; Palfrey's *New England*, i. 55; De Costa's *Pre-Columbian Disc.*, p. 33; Weise's *Discoveries of America*, 31; and particularly Vigfússon in his *English-Icelandic Dictionary* under "Eykt."

[9] "The discovery of America," says Laing (*Heimskringla*, i. 154), "rests entirely upon documentary evidence which cannot, as in the case of Greenland, be substantiated by anything to be discovered in America." Laing and many of the commentators, by some strange process of reasoning, have determined that the proof of these MS. records being written before Columbus' visit to Iceland in 1477 is sufficient to establish the priority of discovery for the Northmen, as if it was nothing in the case that the sagas may or may not be good history; and nothing that it was the opinion entertained in Europe at that time that Greenland and the more distant lands were not a new continent, but a prolongation of Europe by the north. It is curious, too, to observe that, treating of events after 1492, Laing is quite willing to believe in any saga being "filled up and new invented," but is quite unwilling to believe anything of the kind as respects those written anterior to 1492; and yet he goes on to prove conclusively that the *Flatoyensis Codex* is full of fable, as when the saga man makes the eider-duck lay eggs where during the same weeks the grapes ripen and intoxicate when fresh, and the wheat forms in the ear! Laing nevertheless rests his case on the *Flatoyensis Codex* in its most general scope, and calls poets, but not antiquaries, those who attempt to make any additional evidence out of imaginary runes or the identification of places.

farther agree than to place Vinland anywhere from Greenland to Africa.[1]

The earliest to go so far as to establish to a certainty[2] the sites of the sagas was Rafn, who



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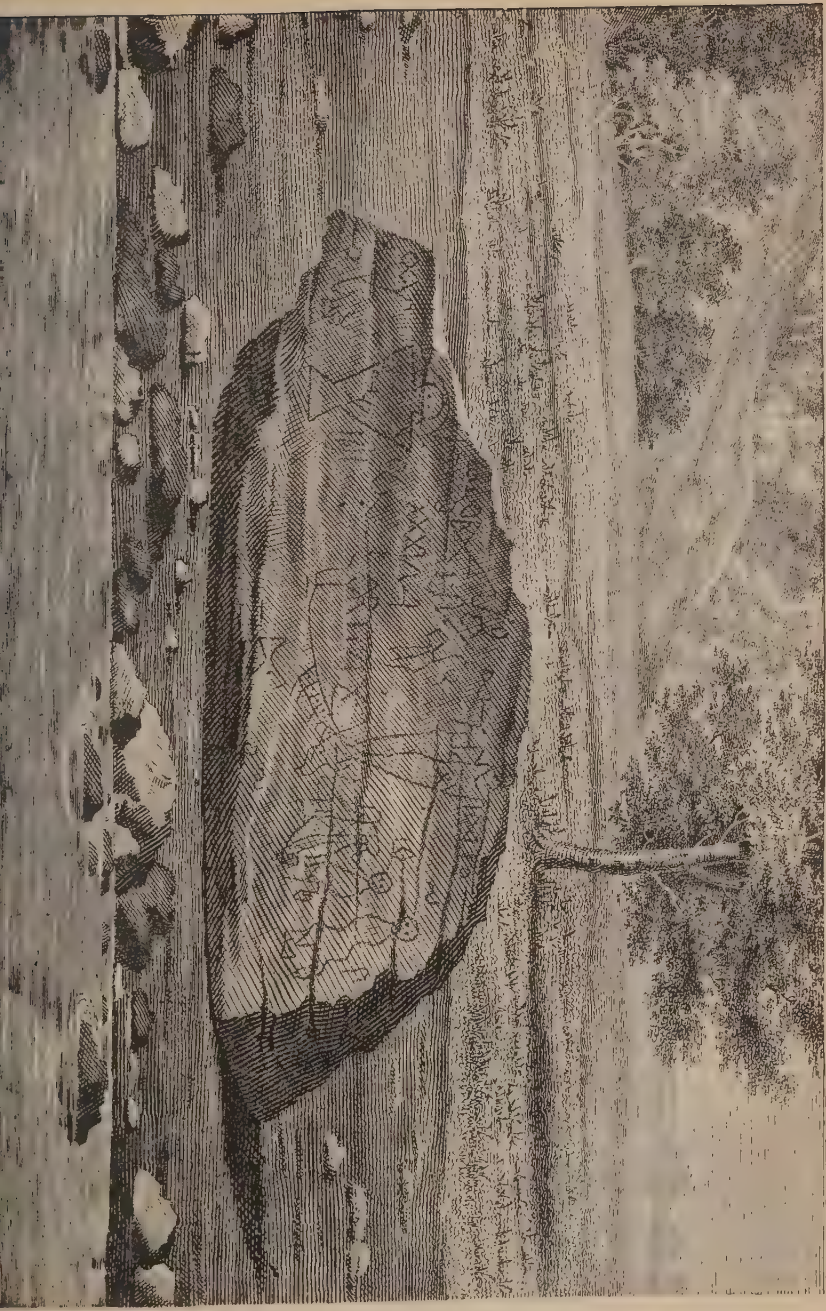
[1] It must be remembered that this divergence was not so wide to the Northmen as it seems to us. With them the Atlantic was sometimes held to be a great basin that was enclasped from northwestern Europe by a prolongation of Scandinavia into Greenland, Helluland, and Markland, and it was a question if the more distant region of Vinland did not belong rather to the corresponding prolongation of Africa on the south. Cf. De Costa, *Pre-Columbian Disc.*, 108; *Hist. Mag.*, xiii. 46.

[2] He wrote: "Here for the first time will be found indicated the precise spot where the ancient Northmen held their intercourse." The committee of the Mass. Hist. Soc. objected to this extreme confidence. *Proceedings*, ii. 97, 107, 500, 505.

NOTE. — The above map is a fac-simile of one of C. C. Rafn's maps. Cf. the maps in Smith, Beamish Gravier, Slafter, Preble's *Amer. Flag*, etc.



DIGHTON ROCK.*

* Reproduction of part of the plate in the *Antiquitates Americanæ*, after a drawing by J. R. Bartlett. The engravings of the rock are numerous: *Mem. Amer. Acad.*, iii.; the works of Beamish, J. T. Smith, Gravier, Gay, Higginson, etc.; Laing's *Heimskringla;* the French ed. of Wheaton; Hermes' *Entdeckung von Ame-*

placed them on the coast of Massachusetts and Rhode Island, wherein nearly all those have followed him who have thought it worth while to be thus particular as to headland and bay.

In applying the saga names they have, however, by no means agreed, for Krossanes is with some Point Alderton, at the entrance of Boston Harbor, and with others the Gurnet Head; the island where honey dew was found is Nantucket with Rafn, and with De Costa an insular region, Nauset, now under water near the elbow of Cape Cod;[1] the Vinland of Rafn is in Narragansett Bay, that of Dr. A. C. Hamlin is at Merry Meeting Bay on the coast of Maine,[2] and that of Horsford is north of Cape Cod,[3] — not to mention other disagreements of other disputants.

We get something more tangible, if not more decisive, when we come to the monumental evidences. DeWitt Clinton and Samuel L. Mitchell found little difficulty at one time in making many people believe that the earthworks of Onondaga were Scandinavian. A pretended runic inscription on a stone said to have been found in the Grave Creek mound was sedulously ascribed to the Northmen.[4] What some have called a runic inscription exists on a rock near Yarmouth in Nova Scotia, which is interpreted "Hako's son addressed the men," and is supposed to commemorate the expedition of Thorfinn in A. D. 1007.[5] A rock on the little islet of Menana, close to Monhegan, on the coast of Maine, and usually referred to as the Monhegan Rock, bears certain weather marks, and there have been those to call them runes.[6] A similar claim is made for a rock in the Merrimac Valley.[7] Rafn describes such rocks as situated in Tiverton and Portsmouth Grove, R. I., but the markings were Indian, and when Dr. S. A. Green visited the region in 1868 some of them had disappeared.[8]

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[1] De Costa, *Pre-Col. Disc.*, 29; *N. E. Hist. Geneal. Reg.*, xviii. 37; Gay, *Pop. Hist.*, i. 41; *Mass. Hist. Soc. Coll.*, viii. 72; *Am. Geog. Soc. Journal*, 1870, p. 50; *Amer. Naturalist*, Aug. and Sept., 1879.

[2] *Am. Ass. Adv. Science, Proc.* (1856), ii. 214.

[3] Cf. paper on the site of Vinland in *Hist. Mag.*, Feb., 1874, p. 94; Alex. Farnum's *Visit of the Northmen to Rhode Island* (*R. I. Hist. Tracts*, no. 2, 1877). The statement of the sagas that there was no frost in Vinland and grass did not wither in winter compels some of the identifiers to resort to the precession of the equinox as accounting for changes of climate (Gay's *Pop. Hist.*, i. 50).

[4] E. G. Squier in *Ethnological Journal*, 1848; Wilson's *Prehist. Man*, ii. 98; *Amer. Ethnol. Soc. Trans.*, i. 392; Schoolcraft's *Indian Tribes*, iv. 118; *Mém. de la Soc. royale des Antiq. du Nord*, 1840–44, p. 127.

[5] *Amer. Philos. Soc. Proc.*, May 2, 1884 (by Henry Phillips, Jr.); *Numismatic and Antiq. Soc. of Philad., Proc.*, 1884, p. 17; Geo. S. Brown's *Yarmouth* (Boston, 1888).

[6] Wilson's *Prehist. Man*, ii. 98; *Amer. Asso. Adv. Science, Proc.*, 1856, p. 214; *Séance annuelle de la Soc. des Antiq. du Nord*, May 14, 1859; H. W. Haynes in *Mass. Hist. Soc. Proc.*, Jan., 1888, p. 56. The Monhegan inscription, as examined by the late C. W. Tuttle and J. Wingate Thornton, was held to be natural markings (*Mag. Amer. Hist.*, ii. 308: *Pulpit of the Revolution*, 410). Charles Rau cites a striking instance of the way in which the lively imagination of Finn Magnusen has misled him in interpreting weather cracks on a rock in Sweden (*Mag. Amer. Hist.*, ii. 83).

[7] *N. E. Hist. Geneal. Reg.*, 1854, p. 185.

[8] *Antiquitates Americanæ*, 335, 371, 401; *Amer. Antiq. Soc. Proc.*, Oct., 1868, p. 13; W. J. Miller's *Wampanoag Indians*.

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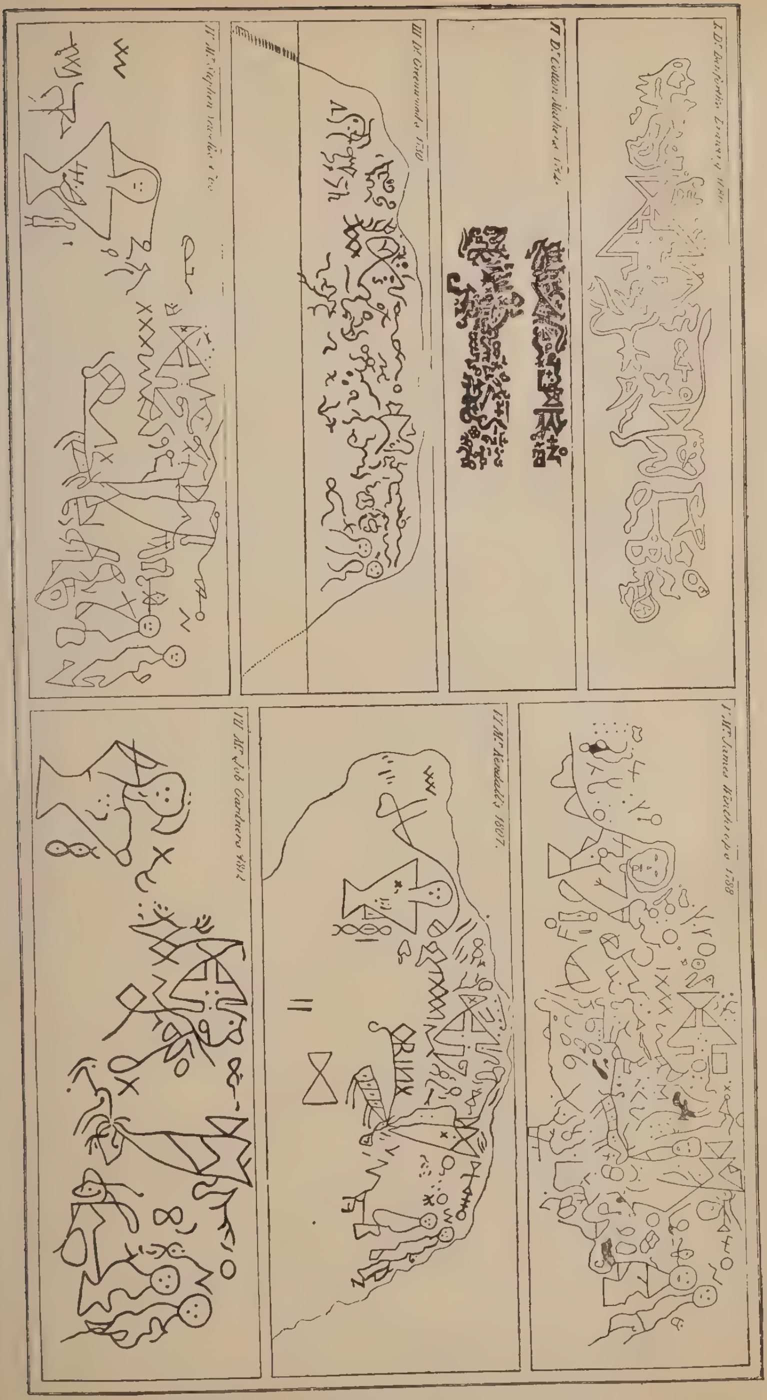
rica: Schoolcraft's *Ind. Tribes*, i. 114, iv. 120; Drake's ed., Philad., 1884, i. p. 88; the Copenhagen *Compte Rendu, Congrès des Américanistes*, p. 70, from a photograph. The Hitchcock Museum at Amherst, Mass., had a cast, and one was shown at the Albany meeting (1836) of the Am. Asso. for the Adv. of Science. The rock was conveyed by deed in 1861 to the Roy. Soc. of Northern Antiquaries (*Mass. Hist. Soc. Proc.*, v. 226; vi. 252), but the society subsequently relinquished their title to a Boston committee, who charged itself with the care of the monument; but in doing so the Danish antiquaries disclaimed all belief in its runic character (*Mag. Amer. Hist.*, iii. 236).

NOTE. — The opposite plate is reduced from one in the *Antiq. Americanæ*. They show the difficulty, even before later weathering, of different persons in discerning the same things on the rock, and in discriminating between fissures and incisions. Col. Garrick Mallery (*4th Rept. Bureau of Ethnology*, p. 250) asserts that the inscription has been "so manipulated that it is difficult now to determine the original details." The drawings represented are enumerated in the text. Later ones are numerous. Rafn also gives that of Dr. Baylies and Mr. Gooding in 1790, and that made for the Rhode Island Hist. Society in 1830. The last has perhaps been more commonly copied than the others. Photographs of late years are common; but almost invariably the photographer has chalked what he deems to be the design, — in this they do not agree, of course, — in order to make his picture clearer. I think Schoolcraft in making his daguerreotype was the first to do this. The most careful drawing made of late years is that by Professor Seager of the Naval Academy, under the direction of Commodore Blake; and there is in the Cabinet of the American Antiquarian Society a MS. essay on the rock, written at Blake's request by Chaplain Chas. R. Hale of the U. S. Navy. Haven disputes Blake's statement that a change in the river's bed more nearly submerges the rock at high tide than was formerly the case. Cf. *Am. Antiq. Soc. Proc.*, Oct., 1864, p. 41, where a history of the rock is given; and in Wilson's *Prehistoric Man*, ii. 93.


I. Dr Danforths Drawing 1680
II Dr Cotton Mathers 1712
III Dr Greenwoods 1730
IV Mr Stephen Sewalls 1768
V Mr James Winthrops 1788
VI Mr Kendalls 1807.
VII Mr Job Gardners 1812

INSCRIPTION ON DIGHTON ROCK. (See p. 102.)

The most famous of all these alleged memorials[1] is the Dighton Rock, lying in the tide on the side of Taunton River, in the town of Berkeley, in Massachusetts.[2] Dr. De Costa thinks it possible that the central portion may be runic. This part is what has been interpreted to mean that Thorfinn with 151 men took possession of the country, and it is said to be this portion of the inscription which modern Indians discard when giving their interpretations.[3] That it is the work of the Indian of historic times seems now to be the opinion common to the best trained archæologists.[4]

Rafn was also the first to proclaim the stone wer now standing at Newport, R. I., as a work ' the Northmen; but the recent antiquaries ithout any exception worth considering, be- eve that the investigations have shown that was erected by Governor Arnold of Rhode land as a windmill, sometime between 1670 id 1680; and Palfrey in his *New England* is ought to have put this view beyond doubt in iowing the close correspondence in design of e tower to a mill at Chesterton, in England.[1]

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[1] Cf. list of inscribed rocks in the *Proceedings* (vol. ii.) of the Davenport Acad. of Natural Sciences.

[2] The stone with its inscription early attracted attention, but Danforth's drawing of 1680 is the earliest known. Cotton Mather, in a dedicatory epistle to Sir Henry Ashurst, prefixed to his *Wonderful Works of God commemorated* (Boston, 1690), gave a cut of a part of the inscription; and he communicated an account with a drawing of the inscription to the Royal Society in 1712, which appears in their *Philosophical Transactions*. Dr. Isaac Greenwood sent another draft to the Society of Antiquaries in London in 1730, and their *Transactions* in 1732 has this of Greenwood. In 1768 Professor Stephen Sewall of Cambridge made a copy of the natural size, which was sent in 1774 by Professor James Winthrop to the Royal Society. Dr. Stiles says that Sewall sent it to Gebelin, of the French Academy, whose members judged them to be Punic characters. Stiles himself, in 1783, in an election sermon delivered at Hartford, spoke of "the visit by the Phœnicians, who charged the Dighton Rock and other rocks in Narragansett Bay with Punic inscriptions remaining to this day, which last I myself have repeatedly seen and taken off at large." Cf. Thornton's *Pulpit of the Revolution*, p. 410. The *Archæologia* (London, viii. for 1786) gave various drawings, with a paper by the Rev. Michael Lort and some notes by Charles Vallancey, in which the opinion was expressed that the inscription was the work of a people from Siberia, driven south by hordes of Tartars. Professor Winthrop in 1788 filled the marks, as he understood them, with printer's ink, and in this way took an actual impression of the inscription. His copy was engraved in the *Memoirs of the American Academy of Arts and Sciences* (vol. ii. for 1793). It was this copy by Winthrop which Washington in 1789 saw at Cambridge, when he pronounced the inscription as similar to those made by the Indians, which he had been accustomed to see in the western country during his life as a surveyor. Cf. *Belknap Papers*, *Mass. Hist. Soc. Coll.*, ii. 76, 77, 81; *Mass. Hist. Soc. Proc.*, x. 114. In 1789 there was also presented to the Academy a copy made by Joseph Gooding under the direction of Francis Baylies (*Belknap Papers*, ii. 160). In the third volume of the Academy's *Memoirs* there are papers on the inscription by John Davis and Edward A. Kendall; Davis (1807) thinking it a representation of an Indian deer hunt, and Kendall later, in his *Travels* (vol. ii. 1809), assigns it to the Indians. This description is copied in Barber's *Historical Collections of Mass.* (p. 117). In 1812 a drawing was made by Job Gardner, and in 1825 there was further discussion in the *Mémoires de la Société de Géographie de Paris*, and in the *Hist. of New York* by Yates and Moulton. In 1831 there was a cut in Ira Hill's *Antiquities of America explained* (Hagerstown, Md.) This was in effect the history of the interest in the rock up to the appearance of Rafn's *Antiquitates Americanæ*, in which for the first time the inscription was represented as being the work of the Northmen. This belief is now shared by few, if any, temperate students. The exuberant Anderson thinks that the rock removes all doubt of the Northmen discovery (*America not discovered by Columbus*, pp. 21, 23, 83). The credulous Gravier has not a doubt. Cf. his *Notice sur le roc de Dighton et le séjour des Scandinaves en Amérique au commencement du XI^{e} siècle* (Nancy, 1875), reprinted from the *Compte Rendu*, *Congrès des Américanistes*, i. 166, giving Rafn's drawing. The Rev. J. P. Bodfish accepts its evidence in the *Proc. Second Pub. Meeting U. S. Cath. Hist. Soc.* (N. Y., 1886).

[3] *Pre-Columbian Discovery of America*, p. lvii. The *Brinley Catalogue*, iii. 5378, gives Dammartin's *Explification de la pierre de Taunston* (Paris? 1840–50) as finding in the inscription an astronomical theme by some nation foreign to America. Buckingham Smith believed it to be a Roman Catholic invocation, around which the Indians later put their symbols (*Amer. Antiq. Soc. Proc.*, Apr. 29, 1863, p. 32). For discussions more or less extensive see Laing's *Heimskringla*, i. 175; Haven in *Smithsonian Contributions*, 1856, viii. 133, in a paper on the "Archæology of the United States:" Charles Rau in *Mag. Amer. Hist.*, Feb., 1878; Apr., 1879; and in *Amer. Antiquarian*, i. 38; Daniel Wilson's *Prehistoric Man*, ii. 97; J. R. Bartlett in *Rhode Island Hist. Soc. Proc.*, 1872–73, p. 70; Haven and others in *Am. Antiq. Soc. Proc.*, Oct., 1864, and Oct., 1867; H. H. Bancroft's *Native Races*, v. 74; Drake's *N. E. Coast; North American Rev.*, 1874; *Amer. Biblical Repository*, July, 1839; *Historical Mag.*, Dec., 1859, and March, 1869; Lelewel's *Moyen Age*, iii.; H. W. Williams's transl. of Humboldt's *Travels*, i. 157, etc.

[4] Schoolcraft wavered in his opinion. (Cf. Haven, 133.) He showed Gooding's drawing to an Algonkin chief, who found in it a record of a battle of the Indians, except that some figures near the centre did not belong to it, and these Schoolcraft thought might be runic, as De Costa has later suggested; but in 1853 Schoolcraft made no reservation in pronouncing it entirely Indian (*Indian Tribes*, i. 112; iv. 120; pl. 14). Wilson (*Prehist. Man*, ii., ch. 19) is severe on Schoolcraft. On the general character of Indian rock inscriptions, — some of which in the delineations accompanying these accounts closely resemble the Dighton Rock, — see Mallery in the *Bureau of Ethnology*, *Fourth Report*, p. 19; Lieut. A. M. Wheeler's Report on Indian tribes in *Pacific Rail Road Reports*, ii.; J. G. Bruff on those of Green River in the Sierra Nevada, in

Certain hearthstones which were discovered 'er twenty-five years ago under a peat bed on ape Cod were held at the time to be a Norse lic.[2] In 1831 there was exhumed in Fall River, ass., a skeleton, which had with it what seemed be an ornamental belt made of metal tubes, rmed by rolling fragments of flat brass and an long plate of the same metal, — not of bronze, is usually said,— with some arrow-heads, cut idently from the same material. The other ncomitants of the burial indicated an Indian the days since the English contact. The skel- on attracted notice in this country by being nnected with the Norsemen in Longfellow's llad, *The Skeleton in Armor*, and Dr. Webb sent such an account of it to the Royal Society of Northern Antiquaries that it was looked upon as another and distinct proof of the identification of Vinland. Later antiquaries have dismissed all beliefs of that nature.[3]

There is not a single item of all the evidence thus advanced from time to time which can be said to connect by archæological traces the presence of the Northmen on the soil of North America south of Davis' Straits. Arguments of this kind have been abandoned except by a few enthusiastic advocates.

That the Northmen voyaging to Vinland encountered natives, and that they were called Skraelings, may be taken as a sufficiently broad statement in the sagas to be classed with those concomitants of the voyages which it is reasonable to accept. Sir William Dawson (*Fossil Men*, 49) finds it easy to believe that these natives were our red Indians; and Gallatin saw no reason to dissociate the Eskimos with other American tribes.[4] That they were Eskimos seems to be the more commonly accepted view.[5]

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nithsonian Rept. (1872); *American Antiquarian*, iv. 259; vi. 119; *Western Reserve Hist. Soc. Tracts*, s. 42, 44, 52, 53, 56; T. Ewbank's *No. Amer. Rock Writing* (Morrisania, 1866); Brinton's *Myths of the ew World*, p. 10; Tylor's *Early Hist. Mankind;* Dr. Richard Andree's *Ethnographische Parallelen und ergleiche* (Stuttgard, 1878). It is Mallery's opinion that no "considerable information of value in an his- rical point of view will be obtained directly from the interpretations of the Pictographs in North America."

[1] Palfrey, i. p. 57; Higginson's *Larger Hist.*, 44; Gay's *Pop. Hist.*, i. 59, 60; Laing's *Heimskringla*, i. 3; Charles T. Brooks's *Controversy touching the old stone mill in Newport* (Newport, 1851); Peterson's *hode Island;* Drake's *New England Coast;* Schoolcraft's *Indian Tribes*, iv. 120; Bishop's *Amer. Manu- ctures*, i. 118; C. S. Pierce in *Science*, iv. 512, who endeavored by measurement to get at what was the unit measure used, — an effort not very successful. Cf. references in *Poole's Index*, p. 913.

Gaffarel accepts the Rafn view in his *Etudes sur la rapports*, etc., 282, as does Gravier in his *Normands ır la route*, p. 168; and De Costa (*Pre-Columbian Disc.*, p. lviii) intimates that "all is in a measure doubt- l." R. G. Hatfield (*Scribner's Monthly*, Mar., 1879) in an illustrated paper undertook to show by com- rison with Scandinavian building that what is now standing is but the central part of a Vinland baptistery, d that the projection which supported the radiating roof timbers is still to be seen. This paper was swered by George C. Mason (*Mag. Amer. Hist.*, iii. 541, Sept., 1879, with other remarks in the *Amer. rchitect*, Oct. 4, 1879), who rehearsed the views of the local antiquaries as to its connection with Gov. rnold. Cf. *Reminiscences of Newport*, by Geo. C. Mason, 1884.

[2] *Hist. Mag.*, Apr., 1862, p. 123; *N. E. Hist. Geneal. Reg.*, 1865, p. 372; Abner Morse's *Traces of the ncient Northmen in America* (Aug., 1861), with a *Supplement* (Boston, 1887).

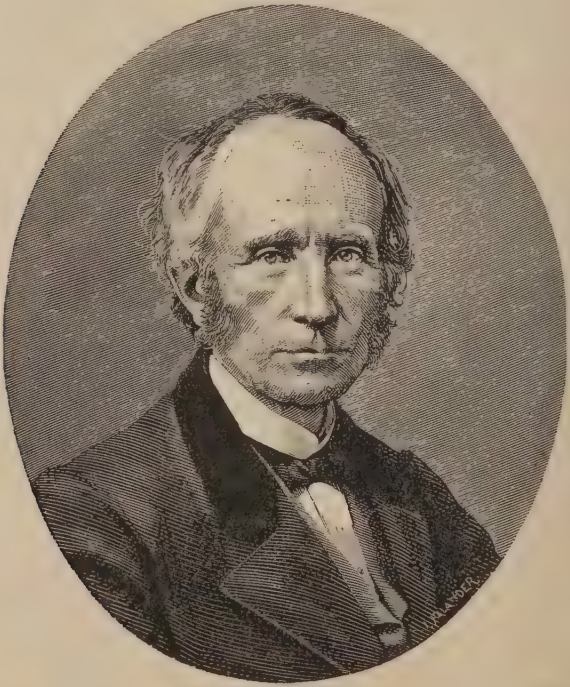
[3] *Mémoires de la Soc. roy. des Antiq. du Nord*, 1843; *New Jersey Hist. Soc. Proc.*; vi.; Stone's *Brant*, ii. 3–94; Schoolcraft's *Ind. Tribes*, i. 127; *Smithsonian Rept.*, 1883, p. 902; Dr. Kneeland in *Peabody Mus. epts.*, no. 20, p. 543. The skeleton was destroyed by fire about 1843.

[4] Dawkins in his *Cave Hunters* accounts them survivors of the cave dwellers of Europe. Cf. Wilson's *rehistoric Man.* A. R. Grote (*Amer. Naturalist*, Apr., 1877) holds them to be the survivors of the palæo- hic man.

[5] E. Beauvois' *Les Skroelings, Ancêtres des Esquimaux* (Paris, 1879); B. F. DeCosta in *Pop. Science onthly*, Nov., 1884; A. S. Packard on their former range southward, in the *American Naturalist*, xix. 471, 3, and his paper on the Eskimos of Labrador, in *Appleton's Journal*, Dec. 9, 1871 (reprinted in Beach's *dian Miscellany*, Albany, 1877). Humboldt holds them to have been driven across America to Europe *iews of Nature*, Bohn's ed., 123). Ethnologists are not wholly agreed as to the course of their migrations. he material for the ethnological study of the Eskimos must be looked for in the narratives of the Arctic yagers, like Scoresby, Parry, Ross, O'Reilly, Kane, C. F. Hall, and the rest; in the accounts by the mission- ies like Egede, Crantz, and others; by students of ethnology, like Lubbock (*Prehist. Times*, ch. 14); Prichard *Researches*, v. 367); Waitz (*Amerikaner*, i. 300); the Abbé Morillot (*Mythologie et légendes des Esquimaux Groenland* in the *Actes de la Soc. Philologique* (Paris, 1875), vol. iv.); Morgan (*Systems of Consanguinity*,

That the climate of the Atlantic coast of the United States and the British provinces was such as was favorable to the present Arctic dwellers is held to be shown by such evidences as tusks of the walrus found in phosphate beds in South Carolina. Rude implements found in the interglacial Jersey drift have been held by C. C. Abbott to have been associated with a people of the Eskimo stock, and some have noted that palæolithic implements found in Pennsylvania closely resemble the work of the modern Eskimos (*Amer. Antiquarian*, i. 10).[1] Dall remarks upon implements of Innuit origin being found four hundred miles south of th present range of the Eskimos of the northwes coast (*Contributions to Amer. Ethnology*, i. p. 98) Charlevoix says that Eskimos were occasionall seen in Newfoundland in the beginning of th last century; and ethnologists recognize to-da the same stock in the Eskimos of Labrador an Greenland.

The best authority on the Eskimos is generall held to be Hinrich Rink, and he contends that they formerly occupied the interior of the continent, and have been pressed north and acros Behring's Straits.[2] W. H. Dall holds simila



HENRIK RINK.*

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267), who excludes them from his Ganowanian family; Irving C. Rosse on the northern inhabitants (*Journa* *Amer. Geog. Soc.*, 1883, p. 163); Ludwig Kumlien in his *Contributions to the natural history of Arcti* *America*, made in connection with the Howgate polar expedition, 1877–78, in *Bull. of the U. S. Nava* *Museum* (Washington, 1879), no. 15; and his paper in the *Smithsonian Report* (1878). There are severa helpful papers in the *Journal of the Anthropological Institute* (London), vol. i., by Richard King, on thei intellectual character; vol. iv. by P. C. Sutherland; vol. vii. by John Rae on their migrations, and W. H Flower on their skulls; vol. ix. by W. J. Sollars on their bone implements. For other references see Bancrof *Native Races*, i. 41, 138; *Poole's Index*, p. 424, and *Supplement*, p. 146.

[1] This evidence is of course rather indicative of a geological antiquity not to be associated with the age o the Northmen. Cf. Murray's *Distribution of Animals*, 128; Howarth's *Mammoth and Flood*, 285.

[2] Rink, born in 1819 in Copenhagen, spent much of the interval from 1853 to 1872 in Greenland. Pillin (*Bibl. Eskimo Language*, p. 80) gives the best account of Rink's publications. His principal book is *Grönlan*

* After a likeness given by Nordenskjöld in his *Exped. till Grönland*, p. 121.

ws.[1] C. R. Markham, who dates their first
pearance in Greenland in 1349, contends, on
other hand, that they came from the west
beria) along the polar regions (Wrangell
nd), and drove out the Norse settlers in Green-
d.[2] The most active of the later students of
Eskimos is Dr. Franz Boas, now of New
rk, who has discussed their tribal boundaries.[3]

F. THE LOST GREENLAND COLONIES. —
ter intercourse with the colonies in Greenland
sed, and definite tradition in Iceland had died
t, and when the question of the re-discovery
uld arise, it was natural that attention
uld first be turned to that coast of Green-
d which lay opposite Iceland as the likelier
s of the lost colonies, and in this way we find
the settlements placed in the maps of the
teenth century. The Archbishop Erik Wal-
ndorf, of Lund, in the early part of that cen-
y had failed to persuade the Danish govern-
nt to send an expedition. King Frederick II
s induced, however, to send one in 1568; but
accomplished nothing; and again in 1579 he
t another in command of an Englishman,
ob Allday, but the ice prevented his landing.
Danish navigator was more successful in
1; but the coast opposite Iceland yielded as
no traces of the Norse settlers. Frobisher's
covery of the west coast seems to have failed of recognition among the Danes; but they with the rest of Europe did not escape noting the importance of the explorations of John Davis in 1585–86, through the straits which bear his name. It now became the belief that the west settlement must be beyond Cape Farewell. In 1605, Christian IV of Denmark sent a new expedition under Godske Lindenow; but there was a Scotchman in command of one of the three ships, and Jacob Hall, who had probably served under Davis, went as the fleet pilot. He guided the vessels through Davis's Straits. But it was rather the purpose of Lindenow to find a north-west passage than to discover a lost colony; and such was mainly the object which impelled him again in 1606, and inspired Karsten Rikardsen in 1607. Now and for some years to come we have the records of voyages made by the whalers to this region, and we read their narratives in Purchas and in such collections of voyages as those of Harris and Churchill.[4] They yield us, however, little or no help in the problem we are discussing. In 1670 and 1671 Christian V sent expeditions with the express purpose of discovering the lost colonies; but Otto Axelsen, who commanded, never returned from his second voyage, and we have no account of his first.

The mission of the priest Hans Egede gave the first real glimmer of light.[5] He was the

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graphisch und statistisch beschrieben (Stuttgart, 1860). The English reader has access to his *Tales and*
aditions of the Eskimo, translated by Rink himself, and edited by Dr. Robert Brown (London, 1875); to
nish Greenland, its people and its products, ed. by Dr. Brown (London, 1877). Rink says of this work
t in its English dress it must be considered a new book. He also published *The Eskimo tribes; their*
tribution and characteristics, especially in regard to language. With a comparative vocabulary (Co-
hagen, *etc.*, 1887). He also considered their dialects as divulging the relationship of tribes in the *Journal*
he Anthropological Institute (xv. 239); and in the same journal (1872, p. 104) he has written of their descent.
k also furnished to the *Compte Rendu*, *Congrès des Américanistes*, a paper on the traditions of Greenland
ancy, 1875, ii. 181), and (Luxembourg, 1877, ii. 327) another on "L'habitat primitif des Esquimaux."
r. Brown has also considered the "Origin of the Eskimo" in the *Archæological Review* (1888), no. 4.

Alaska and its Resources, p. 374; and in *Contributions to Amer. Ethnology*, i. 93.

"On the origin and migrations of the Greenland Esquimaux" in the *Journal Royal Geog. Soc.*, 1865;
he Arctic highlanders" in the *Lond. Ethnol. Soc. Trans.* (1866), iv. 125, and in *Arctic Geography and*
hnology (London, 1875), published by the Royal Geog. Society.

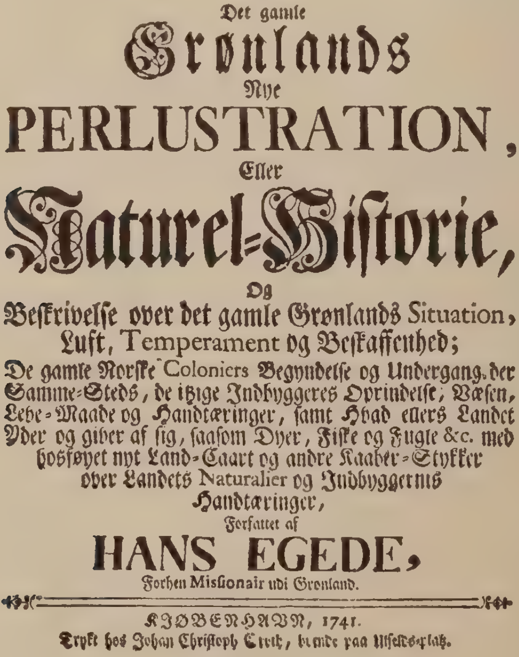
American Antiquarian, Jan., 1888. Cf. other papers by him in the *Proc. Roy. Soc. of Canada*, vol. v.
year among the Eskimos" in the *Journal Amer. Geog. Soc.*, 1887, xix. p. 383; "Reise in Baffinland"
the proceedings of the Berlin Gesellschaft für Erdkunde (1885). Cf. Pilling's *Eskimo Bibliog.*, p. 12; and
linguistic evidences of tribal differences, pp. 69–72, 81–82. Cf. also H. H. Bancroft's *Native Races*, iii.
, and Lucien Adam's "En quoi la langue Esquimaude, deffère-t-elle grammaticalement des autres langues
l'Amérique du Nord?" in the *Compte Rendu*, *Congrès des Amér.* (Copenhagen), p. 337.
nton von Etzel's *Grönland*, *geographisch und statistisch beschrieben aus Dänischen Quellschriften*
uttgart, 1860) goes cursorily over the early history, and describes the Eskimos. Cf. F. Schwatka in *Amer.*
gazine, Aug., 1888.

There is an easy way of tracing these accounts in Joel A. Allen's *List of Works and Papers relating to*
mammalian orders of Cete and Sirenia, extracted from the *Bulletin of Hayden's U. S. Geol. and Geog.*
rvey (Washington, 1882). It is necessary to bear in mind that Spitzbergen is often called Greenland in
se accounts.

His book, *Det gamle Grönlands nye Perlustration*, etc., was first published at Copenhagen in 1729.
ling (*Bibliog. of the Eskimo language*, p. 26) was able to find only a single copy of this book, that in the
itish Museum. Muller (*Books on America*, Amsterdam, 1872, no. 648) describes a copy. This first edition
aped the notice of J. A. Allen, whose list is very carefully prepared (nos. 217, 220, 226, 230, 235). There

earliest to describe the ruins and relics observable on the west coast, but he continued to regard the east settlements as belonging to the east coast, and so placed them on the map. Anderson (Hamburg, 1746) went so far as to place on his map the cathedral of Gardar in a fixed location on the east coast, and his map was variously copied in the following years.

In 1786 an expedition left Copenhagen to explore the east coast for traces of the colonies, but the ice prevented the approach to the coast, and after attempts in that year and in 1787 th effort was abandoned. Heinrich Peter von Eg gers, in his *Om Grönlands österbygds sande Beli genhed* (1792), and *Ueber die wahre Lage d alten Ostgrönlands* (Kiel, 1794), a German tran lation, first advanced the opinion that the eas ern colony as well as the western must hav been on the west coast, and his views we generally accepted; but Wormskjöld in th *Skandinavisk Litteraturselskab's Skrifter*, vol. (Copenhagen, 1814), still adhered to the earli


Det gamle
Grønlands
Nye
PERLUSTRATION,
Eller
Naturel-Hiſtorie,
Og
Beſkrivelſe over det gamle Grønlands Situation,
Luft, Temperament og Beſkaffenhed;
De gamle Norſke Coloniers Begyndelſe og Undergang, der
Samme-Steds, de itzige Indbyggeres Oprindelſe, Væſen,
Lebe-Maade og Handtæringer, ſamt Hvad ellers Landet
Yder og giver af ſig, ſaaſom Dyer, Fiſke og Fugle &c. med
hosføyet nyt Land-Caart og andre Kaaber-Stykker
over Landets Naturalier og Indbyggernis
Handtæringer,
Forfattet af
HANS EGEDE,
Forhen Misſionair udi Grønland.

KJØBENHAVN, 1741.
Trykt hos Johan Chriſtoph Groth, boende paa Ulfelds-plads.

REDUCED FAC-SIMILE.

[Harvard College Library copy.]

were two German editions of this original form of the book, Frankfort, 1730, and Hamburg, 1740, accordi to the *Carter-Brown Catalogue* (ii. 448, 647), but Pilling gives only the first. The 1729 edition was enlarg in the Copenhagen edition of 1741, which has a map, "Gronlandia Antiqua," showing the east colony a west colony, respectively, east and west of Cape Farewell. This edition is the basis of the various trans tions: In German, Copenhagen, 1742, using the plates of the 1741 ed.; Berlin, 1763. In Dutch, Delft, 174 In French, Copenhagen, 1763. In English, London, 1745; abstracted in the *Philosoph. Transactions Roy Soc.* (1744), xlii. no. 47; and again, London (1818), with an historical introduction based on Torfæus and Peyrère. Crantz epitomizes Egede's career in Greenland.

The bibliography in Sabin's *Dictionary* (vi. 22,018, etc.) confounds the Greenland journal (1770–78) of Ha Egede's grandson, Hans Egede Saabye (b. 1746; d. 1817), with the work of the grandfather. This journal of importance as regards the Eskimos and the missions among them. There is an English version: *Gree land: extracts from a journal kept in 1770 to 1778. Prefixed an introduction; illus. by chart of Gree land, by G. Fries. Transl. from the German* [*by H. E. Lloyd*] (London, 1818). The map follows that the son of Hans, Paul Egede, whose *Nachrichten von Grönland aus einem Tagebuche von Bischof Pa Egede* (Copenhagen, 1790) must also be kept distinct. Pilling's *Bibliog. of the Eskimo language* affords t best guide.

nions, and Saabye still believed it possible to ch the east coast.

Some years later (1828–31) W. A. Graah made, order of the king of Denmark, a thorough amination of the east coast, and in his *Under-elses Reise til Ostkysten af Grönland* (Copen-gen, 1832)[1] he was generally thought to estab- the great improbability of any traces of a ony ever existing on that coast. Of late years aah's conclusions have been questioned, for re have been some sites of buildings discovered the east side.[2] The Reverend J. Brodbeck, nissionary, described some in *The Moravian arterly*, July and Aug., 1882. Nordenskjöld held that when the east coast is explored m 65° to 69°, there is a chance of discovering site of an east colony.[3]

R. H. Major, in a paper (*Journal Roy. Geog.* ., 1873, p. 184) on the site of the lost colony, estioned Graah's conclusions, and gave a etch map, in which he placed its site near Cape rewell; and he based his geographical data gely upon the chorography of Greenland and sailing directions of Ivan Bardsen, who was bably an Icelander living in Greenland some e in the fifteenth century.[4]

G. MADOC AND THE WELSH. — Respecting the legends of Madoc, there are reports, which Humboldt (*Cosmos*, Bohn, ii. 610) failed to verify, of Welsh bards rehearsing the story before 1492,[5] and of statements in the early Welsh annals. The original printed source is in Humfrey Lloyd's *History of Cambria, now called Wales, written in the British language* [by Caradoc] *about 200 years past* (London, 1584).[6] The book contained corrections and additions by David Powell, and it was in these that the passages of importance were found, and the supposition was that the land visited lay near the Gulf of Mexico. Richard Hakluyt, in his *Principall Navigations*, took the story from Powell, and connected the discovery with Mexico in his edition of 1589, and with the West Indies in that of 1600 (iii. p. 1), — and there was not an entire absence of the suspicion that it was worth while to establish some sort of a British claim to antedate the Spanish one established through Columbus.[7]

The linguistic evidences were not brought into prominence till after one Morgan Jones had fallen among the Tuscaroras[8] in 1660, and found, as he asserted, that they could under-

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An English translation by Macdougall was published in London in 1837 (Pilling, p. 38; Field, no. 619). French version of Graah's introduction with notes by M. de la Roquette was published in 1835. Cf. rnal Royal Geog. Soc., i. 247. After Graah's publication Rafn placed the Osterbygden on the west coast is map. Graah's report (1830) is in French in the *Bull. de la Soc. de Géog. de Paris*, 1830.

On the present scant, if not absence of, population on the east coast of Greenland, see J. D. Whitney's *natic Changes of later geological times* (*Mus. of Comp. Zoöl. Mem.*, vii. p. 303, Cambridge, 1882).

The changes in opinion respecting the sites of the colonies and the successive explorations are followed he *Compte Rendu*, *Congrès des Américanistes* by Steenstrup (p. 114) and by Valdemar-Schmidt, "Sur Voyages des Danois au Groenland" (195, 205, with references). Cf. on these lost colonies and the search them *Westminster Review*, xxvii. 139; *Harper's Monthly*, xliv. 65 (by I. I. Hayes); *Lippincott's Mag.*, g., 1878; *Amer. Church Rev.*, xxi. 338; and in the general histories, La Peyrère (Dutch transl., Amster-n, 1678); Crantz (Eng. transl., 1767, p. 272); Egede (Eng. ed., 1818, introd.); and Rink's *Danish Green-d*, ch. 1.

The original of Bardsen's account has disappeared, but Rafn puts it in Latin, translating from an early y found in the Faröe Islands (*Antiquitates Américanæ*, p. 300). Purchas gives it in English, from a y which had belonged to Hudson, being translated from a Dutch version which Hudson had borrowed, the tch being rendered by Barentz from a German version. Major also prints it in *Voyages of the Zeni*. He ognizes in Bardsen's "Gunnbiorn's Skerries" the island which is marked in Ruysch's map (1507) as blown in 1456 (see Vol. III. p. 9).

Hakluyt, however, prints some pertinent verses by Meredith, a Welsh bard, in 1477.

Murphy Catal., no. 1489; Sabin, x. p. 322; *Carter-Brown Catal.* for eds. of 1584, 1697, 1702, 1774, 1811, 2, etc.

In the seventeenth century there were a variety of symptoms of the English eagerness to get the claims of doc substantiated, as in Sir Richard Hawkins's *Observations* (Hakluyt Soc., 1847), and James Howell's *niliar Letters* (London, 1645). Belknap (*Amer. Biog.*, 1794, i. p. 58) takes this view of Hakluyt's purpose; Pinkerton, *Voyages*, 1812, xii. 157, thinks such a charge an aspersion. The subject was mentioned with some ticularity or incidentally by Purchas, Abbott (*Brief Description*, London, 1620, 1634, 1677), Smith (*Vir-ia*), and Fox (*North-West Fox*). Sir Thomas Herbert in his *Relation of some Travaile into Africa and a* (London, 1634) tracks Madoc to Newfoundland, and he also found Cymric words in Mexico, which ured him in his search for further proofs (Bohn's *Lowndes*, p. 1049; Carter-Brown, ii. 413, 1166). he *Nieuwe en onbekende Weereld* of Montanus (Amsterdam, 1671) made the story more familiar. It essarily entered into the discussions of the learned men who, in the seventeenth century, were busied with question of the origin of the Americans, as in De Laet's *Notæ ad dissertationem Hugonis Grotii* (Paris, 3), who is inclined to believe the story, as is Hornius in his *De Originibus Americaniis* (1652).

Cf. Catlin's *No. Amer. Indians*, i. 207; ii. 259, 262.

stand his Welsh. He wrote a statement of his experience in 1685–6, which was not printed till 1740.[1]

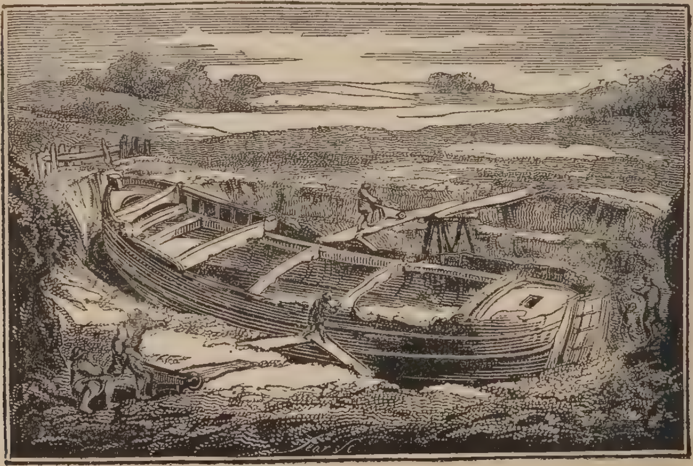
During the eighteenth century we find Campanius in his *Nye Swerige* (1702) repeating the story; Torfæus (*Hist. Vinlandiæ*, 1705) not rejecting it; Carte (*England*, 1747) thinking it probable; while Campbell (*Admirals*, 1742), Lyttleton (*Henry the Second*, 1767), and Robertson (*America*, 1777) thought there was no ground, at least, for connecting the story with America.

It was reported that in 1764 a man, Griffeth, was taken by the Shawnees to a tribe of Indians who spoke Welsh.[2] In 1768, Charles Beatty published his *Journal of a two months' Tour in America* (London), in which he repeated information of Indians speaking Welsh in Pennsylvania and beyond the Mississippi, and of th finding of a Welsh Bible among them.

In 1772–73, David Jones wandered among th tribes west of the Ohio, and in 1774, at Burlin ton, published his *Journal of two visits*, in whic he enumerates the correspondence of word which he found in their tongues with his nativ Welsh.[3]

Without noting other casual mentions, som of which will be found in Paul Barron Wa son's bibliography (in Anderson's *America n discovered by Columbus*, p. 142), it is enoug to say that towards the end of the century th papers of John Williams[4] and George Burder gave more special examination to the subje than had been applied before.

The renewed interest in the matter seems t have prompted Southey to the writing of h



A BRITISH SHIP.*

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[1] *Gentleman's Magazine.* It is reprinted in H. H. Bancroft's *Native Races*, v. 119, and in Baldwin's *An America*, 286. Cf. John Paul Marana, *Letters writ by a Turkish Spy*, 1691, and later. The story had bee told in *The British Sailors' Directory* in 1739 (Carter-Brown, iii. 599).

[2] Warden's *Recherches*, p. 157; Amos Stoddard's *Sketches of Louisiana* (Philad., 1812), ch. 17, and *Phila Med. and Physical Journal*, 1805; with views *pro* and *con* by Harry Toulmin and B. S. Barton.

[3] The book was reprinted by Sabin, N. Y., 1865, with an introduction by Horatio Gates Jones.

[4] *An inquiry into the truth of the tradition concerning the discovery of America by Prince Madog* (Lond 1791), and *Further Observations . . . containing the account given by General Bowles, the Creek or Ch rokee Indian, lately in London, and by several others, of a Welsh tribe of Indians now living in the wester parts of North America* (Lond., 1792, — Field's *Ind. Bibliog.*, nos. 1664–65). Carey's *American Museu* (April, May, 1792), xi. 152, etc., gave extracts from Williams.

[5] *The Welsh Indians, or a collection of papers respecting a people whose ancestors emigrated from Wal to America with Prince Madoc, and who are now said to inhabit a beautiful country on the west side the Mississippi* (London, 1797). He finds these conditions in the Padoucas. Goodson, *Straits of Ania* (Portsmouth, 1793), p. 71, makes Padoucahs out of "Madogwys"!

* After a cut in *The Mirror of Literature*, etc. (London, 1823), vol. i. p. 177, showing a vessel then recentl exhumed in Kent, and supposed to be of the time of Edward I, or the thirteenth century. The vessel wa sixty-four feet long.

oem *Madoc*, though he refrained from publishng it for some years. If one may judge from is introductory note, Southey held to the hisorical basis of the narrative. Meanwhile, reorts were published of this and the other tribes eing found speaking Welsh.[1] In 1816, Henry Kerr printed at Elizabethtown, New Jersey, his *Travels through the Western interior of the United States, 1808–16, with some account of a ribe whose customs are similar to those of the ncient Welsh.* In 1824, Yates and Moulton (*State of New York*) went over the ground ather fully, but without conviction. Hugh Murray (*Travels in North America*, London, 829) believes the Welsh went to Spain. In 834, the different sides of the case were disussed by Farcy and Warden in Dupaix's *Anquités Méxicaines.* Some years later the publiation of George Catlin[2] probably gave more onviction than had been before felt,[3] arising rom his statements of positive linguistic correpondences in the language of the so-called White[4] Mandans[5] on the Missouri River, the imilarity of their boats to the old Welsh coraes, and other parallelisms of custom. He beeved that Madoc landed at Florida, or perhaps assed up the Mississippi River. His conclusions ere a reinforcement of those reached by Wilams.[6] The opinion reached by Major in his dition of *Columbus' Letters* (London, 1847) hat the Welsh discovery was quite possible, hile it was by no means probable, is with little oubt the view most generally accepted to-day; hile the most that can be made out of the laim is presented with the latest survey in B. . Bowen's *America discovered by the Welsh in 1170* A. D. (Philad., 1876). He gathers up, as helping his proposition, such widely scattered evidences as the Lake Superior copper mines and the Newport tower, both of which he appropriates; and while following the discoverers from New England south and west, he does not hesitate to point out the resemblance of the Ohio Valley mounds[7] to those depicted in Pennant's *Tour of Wales;* and he even is at no loss for proofs among the relics of the Aztecs.[8]

H. The Zeni and their Map. — Something has been said elsewhere (Vol. III. p. 100) of the influence of the Zeni narrative and its map, in confusing Frobisher in his voyages. The map was reproduced in the Ptolemy of 1561, with an account of the adventures of the brothers, but it was so far altered as to dissever Greenland from Norway, of which the Zeni map had made it but an extension.[9]

The story got further currency in Ramusio (1574, vol. ii.), Ortelius (1575), Hakluyt (1600, vol. iii.), Megiser's *Septentrio Novantiquus* (1613), Purchas (1625), Pontanus' *Rerum Danicarum* (1631), Luke Fox's *North-West Fox* (1633), and in De Laet's *Notæ* (1644), who, as well as Hornius, *De Originibus Americanis* (1644), thinks the story suspicious. It was repeated by Montanus in 1671, and by Capel, *Vorstellungen des Norden*, in 1676. Some of the features of the map had likewise become pretty constant in the attendant cartographical records. But from the close of the seventeenth century for about a hundred years, the story was for the most part ignored, and it was not till 1784 that the interest in it was revived by the publications of Forster[10] and Buache,[1] who each expressed their belief in the story.

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[1] *Chambers' Journal*, vi. 411, mentioning the Asguaws.

[2] *Letter on the Manners, Customs, and Condition of the No. Amer. Indians* (N. Y., 1842).

[3] He convinced, for instance, Fontaine in his *How the World was Peopled*, p. 142.

[4] On the variety of complexion among the Indians, see Short's *No. Amer. of Antiq.*, p. 189; McCulloh's *esearches;* Haven, *Archæol. U. S.*, 48; Morton in *Schoolcraft*, ii. 320; *Ethnolog. Journal*, London, July, 848; App. 1849, commenting on Morton.

[5] Pilling, *Bibliog. of Siouan languages* (Washington, 1887, p. 48), enumerates the authorities on the Iandan tongue. The tribe is now extinct. Cf. Morgan's *Systems of Consanguinity*, p. 181.

[6] See also *Smithsonian Report*, 1885, Part ii. pp. 80, 271, 349, 449. Ruxton in *Life in the Far West* N. Y., 1846) found Welsh traces in the speech of the Mowquas, and S. Y. McMaster in *Smithsonian Rept.*, 865, heard Welsh sounds among the Navajos.

[7] Filson in his *Kentucke* has also pointed out this possibility.

[8] The bibliography of the subject can be followed in Watson's list, already referred to, and in that in the *Amer. ibliopolist*, Feb., 1869. A few additional references may help complete these lists: Stephens's *Literature of he Cymry*, ch. 2; the Abbé Domenech's *Seven Years in the Great Desert of America;* Tytler's *Progress of iscovery;* Moosmüller's *Europäer in Amerika vor Columbus* (Regensburg, 1879, ch. 21); Gaffarel's *Rapport* tc., p. 216; *Analytical Mag.*, ii. 409; *Atlantic Monthly*, xxxvii. 305; *No. Am. Rev.* (by E. E. Hale), lxxxv. 05; *Antiquary*, iv. 65; *Southern Presbyterian Rev.*, Jan., April, 1878; *Notes and Queries*, index.

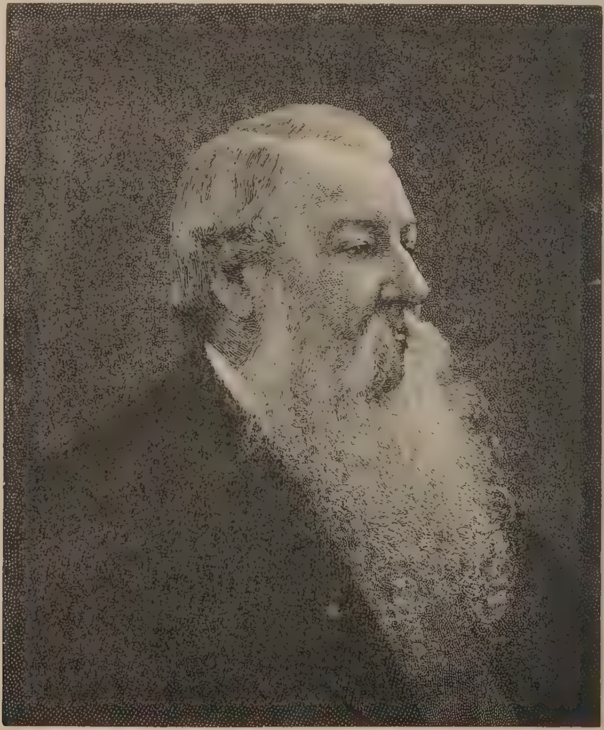
[9] This Ptolemy map is reproduced in Gravier's *Les Normands sur la route*, etc., 6th part, ch. 1; and in ordenskjöld's *Studien und Forschungen* (Leipzig, 1805), p. 25. The Ptolemy of 1562 has the same plate.

[10] J. R. Forster's *Discoveries in the Northern Regions.* His confidence was shared by Eggers (1794) in his *rue Site of Old East Greenland* (Kiel), who doubts, however, if the descriptions of Estotiland apply to merica. It was held to be a confirmation of the chart that both the east and west Greenland colonies were n the side of Davis's Straits.

A more important inquiry in behalf of the narrative took place at Venice in 1808, when Cardinal Zurla republished the map in an essay, and marked out the track of the Zeni on a modern chart.[2]

In 1810, Malte-Brun accorded his belief in the verity of the narrative, and was inclined to believe that the Latin books found in Estotiland were carried there by colonists from Greenland.[3] A reactionary view was taken by Biddle in his *Sebastian Cabot*, in 1831, who believed the publication of 1558 a fraud; but the most effective denial of its authenticity came a few years later in sundry essays by Zahrtmann.[4]

The story got a strong advocate, after nearly forty years of comparative rest, when R. H. Major, of the map department of the British Museum, gave it an English dress and annexed a commentary, all of which was published by the Hakluyt Society in 1873. In this critic's view, the good parts of the map are of the fourteenth century, gathered on the spot, while the



RICHARD H. MAJOR.*

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[1] Buache reproduced the map, and read in 1784, before the Academy of Inscriptions in Paris, his *Mémoire sur la Frisland*, which was printed by the Academy in 1787, p. 430.

[2] *Dissertazione intorno ai viaggi e scoperte settentrionali di Nicolo e Antonio Fratelli Zeni.* This paper was substantially reproduced in the same writer's *Di Marco Polo e degli altri Viaggiatori veneziani più illustri dissertazioni* (Venice, 1818).

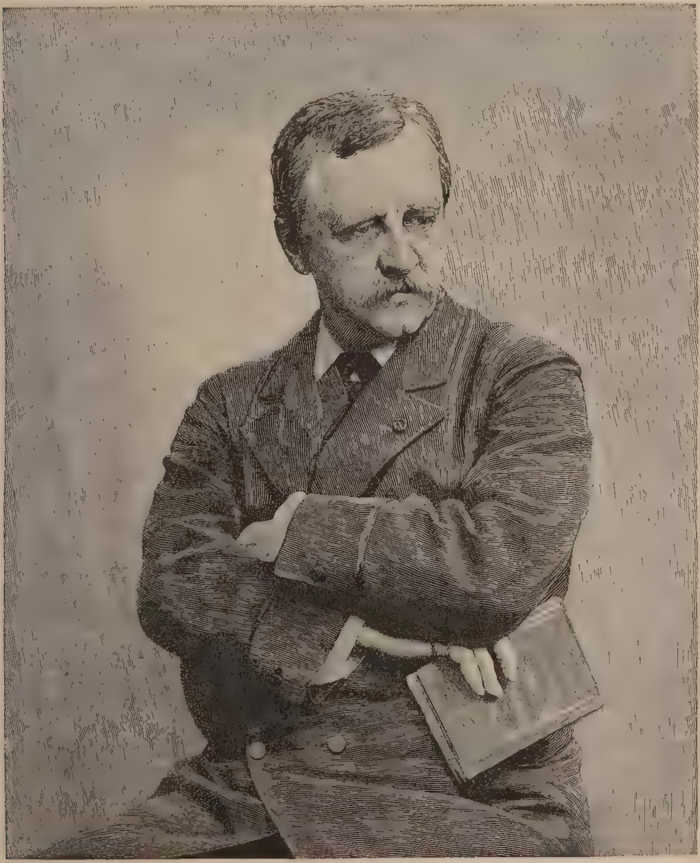
[3] *Annales des Voyages* (1810), x. 72; *Précis de la Géographie* (1817).

[4] *Nordisk Tidsskrift for Oldkyndighed* (Copenhagen, 1834), vol. i. p. 1; *Royal Geog. Soc. Journal* (London, 1835), v. 102; *Annales des Voyages* (1836), xi.

George Folsom, in the *No. Amer. Rev.*, July, 1838, criticised Zahrtmann, and sustained an opposite view. T. H. Bredsdorff discussed the question in the *Grönlands Historiske Mindesmæker* (iii. 529); and La Roquette furnished the article in Michaud's *Biog. Universelle.*

* [After a photograph kindly furnished by himself at the editor's request. — Ed.]

se parts arose from the misapprehensions of young Zeno, who put together the book of 8.[1] The method of this later Zeno was the same year (1873) held by Professor Kon- Maurer to be hardly removed from a fraud- nt compilation of other existing material. There has been a marked display of learning, of late years, in some of the discussions. Cornelio Desimoni, the archivist of Genoa, has printed two elaborate papers.[2] The Danish archivist Frederik Krarup published (1878) a sceptical paper in the *Geografisk Tidsskrift* (ii.



BARON NORDENSKJÖLD.*

Major also, in his paper (*Royal Geog. Soc. Journal*, 1873) on “The Site of the Lost Colony of Greenland ermined, and the pre-Columbian discoveries of America confirmed, from fourteenth century documents,” ed the Zeno account and map in connection with Ivan Bardsen's Sailing Directions in placing the missing ony near Cape Farewell. Major epitomized his views on the question in *Mass. Hist. Soc. Proc.*, Oct., 1874. H. C. Rawlinson commented on Major's views in his address before the Royal Geog. Society (*Journal*, 73, p. clxxxvii).

Stevens (*Bibl. Geographica*, no. 3104) said: “If the map be genuine, the most of its geography is false, ile a part of it is remarkably accurate.”

[2] *I viaggi e la Carta dei Fratelli Zeno Veneziani* (Florence, 1878), and a *Studio Secondo* (*Estratto dall. rchivio Storico Italiano*) in 1885.

* [From a recent photograph. There is another engraved likeness in the second volume of his *Vega*.]

145).[1] The most exhaustive examination, however, has come from a practical navigator, the Baron A. E. Nordenskjöld, who in working up the results of his own Arctic explorations was easily led into the intricacies of the Zeno controversy. The results which he reaches are that the Zeni narratives are substantially true; that there was no published material in 1558 which could have furnished so nearly an accurate account of the actual condition of those northern waters; that the map which Zahrtmann saw in the University library at Copenhagen, and which he represented to be an original from which the young Zeno of 1558 made his pretended original, was in reality nothing but the Donis map in the Ptolemy of 1482, while the Zeno map is much more like the map of the north made by Claudius Clavis in 1427, which was discovered by Nordenskjöld in a codex of Ptolemy at Nancy.[2]

Since Nordenskjöld advanced his views there have been two other examinations: the one by Professor Japetus Steenstrup of Copenhagen,[8] and the other by the secretary of the Danish Geographical Society, Professor Ed. Erslef, who offered some new illustrations in his *Nye Oplysninger om Broedrene Zenis Rejser* (Copenhagen, 1885).[4]

Among those who accept the narratives ther is no general agreement in identifying the pri cipal geographical points of the Zeno map. Th main dispute is upon Frislanda, the island wher the Zeni were wrecked. That it was Icelan has been maintained by Admiral Irminger,[5] an Steenstrup (who finds, however, the text not t agree with the map), while the map accompan ing the *Studi biografici e bibliografici sulla stori della geografia in Italia* (Rome, 1882) traces th route of the Zeni from Iceland to Greenlan under 70° of latitude.

On the other hand, Major has contended f the Faröe islands, arguing that while the e graved Zeno map shows a single large island, might have been an archipelago in the origina with outlines run together by the obscurities its dilapidation, and that the Faröes by the preserved names and by their position correspor best with the Frislanda of the Zeni.[6] Major views have been adopted by most later writer perhaps, and a similar identification had earli been made by Lelewel,[7] Kohl,[8] and others.

The identification of Estotiland involves th question if the returned fisherman of the na rative ever reached America. It is not uncor mon for even believers in the story to der that Estotiland and Drogeo were Americ That they were parts of the New World wa vever, the apparent belief of Mercator and of ny of the cartographers following the publi-ion of 1558, and of such speculators as Hugo otius, but there was little common consent their exact position.[1]

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[1] "Zeniernes Rejse til Norden et Tolkning Forsoeg," with a fac-simile of the Zeni map.

[2] Nordenskjöld's *Om bröderna Zenos resor och de äldsta kartor öfner Norden* was published at Stockhol in 1883, as an address on leaving the presidency of the Swedish Academy, April 12, 1882; and in the same yea at the Copenhagen meeting of the Congrès des Américanistes, he presented his *Trois Cartes précolumbienn représentant une partie de l'Amérique* (Greenland), which included fac-similes of the Zeno (1558) and Don (1482) maps with that of Claudius Clavus (1427). This last represents "Islandia" lying midway alone in t sea between "Norwegica Regio" and "Gronlandia provincia." The "Congelatum mare" is made to flow nor of Norway, so as almost to meet the northern Baltic, while north of this frozen sea is an Arctic region, of whic Greenland is but an extension south and west. The student will find these and other maps making part the address already referred to, which also makes part in German of his *Studien und Forschungen veranlas durch meine Reisen im hohen Norden, autorisirte deutsche Ausgabe* (Leipzig, 1885). The maps accompan ing it not already referred to are the usual Ptolemy map of the north of Europe, based on a MS. of t fourteenth century; the "Scandinavia" from the *Isolario* of Bordone, 1547; that of the world in the M *Insularium illustratum* of Henricus Martellus, of the fifteenth century, in the British Museum, copied fro the sketch in José de Lacerda's *Exame dos Viagens do Doutor Livingstone* (Lisbon, 1867); the "Scandinavia and the "Carta Marina" in the Venetian Ptolemy of 1548; the map of Olaus Magnus in 1567; the chart Andrea Bianco (1436); the map of the Basle ed. (1532) of Grynæus' *Novis Orbis;* that of Laurentius Frisi (1524). He gives these maps as the material possible to be used in 1558 in compiling a map, and to show t superiority of the Zeno chart. Cf. *Nature*, xxviii. 14; and Major in *Royal Geog. Soc. Proc.*, 1883, p. 473.

[8] "Zeni'ernes Reiser i Norden" in the publication of the Royal Society of Northern Antiquaries (Cope hagen, 1883), in which he compares the Zeno Frislanda with the maps of Iceland. He also communicated the Copenhagen meeting of the Congrès des Américanistes "Les voyages des frères Zeni dans le Nord (*Compte Rendu*, p. 150).

[4] This also appeared in the *Geog. Tidsskrift*, vii. 153, accompanied by fac-similes of the Zeni map, wi Ruscelli's alteration of it (1561), and of the maps of Donis (1482), Laurentius Frisius (1525), and of the Ptole of 1548.

[5] *Roy. Geog. Soc. Journal* (1879), vol. xlix. p. 398, "Zeno's Frisland is Iceland and not the Faröes," — an the same views in "Nautical Remarks about the Zeni Voyages" in *Compte Rendu, Cong. des Amér.* (Cope hagen, 1883), p. 183.

[6] "Zeno's Frisland is not Iceland, but the Faröes" in *Roy. Geog. Soc. Journal* (1879), xlix. 412.

[7] *Géog. du Moyen Age*, iii. 103.

[8] *Discovery of Maine*, 92.

I. ALLEGED JEWISH MIGRATION. — The ntification of the native Americans with the ck of the lost tribes of Israel very soon be-ne a favorite theory with the early Spanish ests settled in America. Las Casas and ıran adopted it, while Torquemada and osta rejected it. André Thevet, of menda-us memory, did not help the theory by espous- ; it. It was approved in J. F. Lumnius's *De remo Dei Judicio et Indorum vocatione, libri* (Venice and Antwerp, 1569);[2] and a century er the belief attracted new attention in the *igen de los Americanos de Manasseh Ben Is-l*, published at Amsterdam in 1650.[3] It was the same year (1650) that the question re-ved the first public discussion in English in ıomas Thorowgood's *Jewes in America, or, obabilities that the Americans are of that Race. ith the removall of some contrary reasonings, d earnest desires for effectuall endeavours to ke them Christian* (London, 1650).[4] Thorow-od was answered by Sir Hamon L'Estrange in *Americans no Iewes, or Improbabilities that the Americans are of that race* (London, 1652). The views of Thorowgood found sympathy with the Apostle Eliot of Massachusetts; and when Thorowgood replied to L'Estrange he joined with it an essay by Eliot, and the joint work was entitled *Iewes in America, or probabilities that those Indians are Judaical, made more probable by some additionals to the former conjectures: an accurate discourse is premised of Mr. John Eliot* (*who preached the gospel to the natives in their own language*) *touching their origination, and his Vindication of the planters* (London, 1660). What seems to have been a sort of supplement, covering, however, in part, the same ground, appeared as *Vindiciæ Judæorum, or a true account of the Jews, being more accurately illustrated than heretofore*, which includes what is called "The learned conjectures of Rev. Mr. John Eliot" (32 pp.). Some of the leading New England divines, like Mayhew and Mather,[5] espoused the cause with similar faith. Roger Williams also was of the same opinion. William Penn is said to have held like views. The belief may be said to have been general, and had not died out in New England when Samuel Sewall, in 1697, published his *Phænomena quædam Apocalyptica ad aspectum Novi Orbis Configurata*.[6]

· Dudley, *Arcano del Mare*, pl. lii, places Estotiland between Davis and Hudson's Straits; but Torfæus ıbts if it is Labrador, as is "commonly believed." Lafitau (*Mœurs des Sauvages*) puts it north of Hudson y. Forster calls it Newfoundland. Beauvois (*Les colonies Européenes du Markland et de l'Escociland*) kes it include Maine, New Brunswick, and part of Lower Canada. These are the chief varieties of belief. eenstrup is of those who do not recognize America at all. Hornius, among the older writers, thought that otland or Shetland was more likely to have been the fisherman's strange country. Santarem (*Hist. de la rtographie*, iii. 141) points out an island, "Y Stotlandia," in the Baltic, as shown on the map of Giovanni ardo (1448) at Venice.

In P. B. Watson's *Bibliog. of Pre-Columbian Discoveries of America* there is the fullest but not a complete : on the subject, and from this and other sources a few further references may be added: Belknap's *Amer. ography;* Humboldt's *Examen Critique*, ii. 120; Asher's *Henry Hudson*, p. clxiv; Gravier's *Découverte de Amérique*, 183; Gaffarel's *Etude sur l'Amérique avant Colomb*, p. 261, and in the *Revue de Géog.*, vii., t., Nov., 1880, with the Zeno map as changed by Ortelius; De Costa's *Northmen in Maine;* Weise's *Dis-eries of America*, p. 44; Goodrich's *Columbus;* Peschel's *Gesch. des Zeitalters der Entdeckungen* (1858), l Ruge's work of the same title; Guido Cora's *I precursori di Cristoforo Colombo* (Rome, 1886), taken m the *Bollettino della soc. geog. italiana*, Dec., 1885; Gay's *Pop. Hist. U. S.* (i. 76); Foster's *Prehistoric ıces; Studi biog. e bibliog. soc. geog. ital.*, 2d ed., 1882, p. 117; P. O. Moosmüller's *Europäer in Amerika · Columbus*, ch. 24; *Das Ausland*, Oct. 11, Dec. 27, 1886; *Nature*, xxviii. p. 14.

Geo. E. Emery, Lynn, Mass., issued in 1877 a series of maps, making Islandia to be Spitzbergen, with the st Bygd of the Northmen at its southern end; Frisland, Iceland; and Estotiland, Newfoundland.

[2] Sabin, x., no. 42,675.

[3] There are editions with annotations by Robert Ingram, at Colchester, Eng., 1792; and by Santiago rez Junquera, at Madrid, 1881. Theoph. Spizelius' *Elevatio relationis Montezinianæ de repertis in Ame-a tribubus Israeliticis* (Basle, 1661) is a criticism (Leclerc, 547; Field, 1473). One Montesinos had ofessed to have found a colony of Jews in Peru, and had satisfied Manasseh Ben Israel of his truthfulness.

[4] Cf. collations in Stevens's *Nuggets*, p. 728, and his *Hist. Coll.*, ii. no. 538; Brinley, iii. no. 5463; Field, no. 51, who cites a new edition in 1652, called *Digitus Dei: new discoveryes, with some arguments to prove at the Jews (a nation) a people . . . inhabit now in America . . . with the history of Ant: Montesinos ested by Mannasseh Ben Israell.* A divine, John Dury, had urged Thorowgood to publish, and had fore this, in printing some of the accounts of the work of Eliot and others among the New England Indians, nounced his belief in the theory.

[5] Cotton Mather (*Magnalia*, iii. part 2) tells how Eliot traced the resemblances to the Jews in the New ıgland Indians.

[6] 2d ed., 1727. Cf. Sibley's *Harvard Graduates*, ii. p. 361; Carter-Brown, iii. 401.

After the middle of the last century we begin to find new signs of the belief. Charles Beatty, in his *Journal of a two months' tour with a view of promoting religion among the frontier inhabitants of Pennsylvania* (Lond., 1768), finds traces of the lost tribes among the Delawares, and repeats a story of the Indians long ago selling the same sacred book to the whites with which the missionaries in the end aimed to make them acquainted. Gerard de Brahm and Richard Peters, both familiar with the Southern Indians, found grounds for accepting the belief. The most elaborate statement drawn from this region is that of James Adair, who for forty years had been a trader among the Southern Indians.[1] Jonathan Edwards in 1788 pointed out in the Hebrew some analogies to the native speech.[2] Charles Crawford in 1799 undertook the proof.[3] In 1816 Elias Boudinot, a man eminent in his day, contributed further arguments.[4] Ethan Smith based his advocacy largely on the linguistic elements.[5] A few years later an Englishman, Israel Worsley, worked over the material gathered by Boudinot and Smith, and added something.[6] A prominent American Jew, M. M. Noah, published in 1837 an address on th subject which hardly added to the weight o testimony.[7] J. B. Finlay, a mulatto missionar among the Wyandots, was satisfied with th Hebrew traces which he observed in that tribe. Geo. Catlin, working also among the Wester Indians, while he could not go to the length o believing in the lost tribes, was struck with th many analogies which he saw.[9] The most elab orate of all expositions of the belief was mad by Lord Kingsborough in his *Mexican Antiqu ties* (1830–48).[10] Since this book there has bee no pressing of the question with any claims t consideration.[11]

J. Possible Early African Migration — These may have been by adventure or b helpless drifting, with or without the Canarie as a halting-place. The primitive people of th Canaries, the Guanches, are studied in Sabi Berthelot's *Antiquités Canariennes* (Paris, 187 and A. F. de Fontpertuis' *L'archipel des Can ries, et ses populations primitives*, also in the *Revu de Géographie*, June, 1882, not to mention earlie histories of the Canary Islands (see Vol. I

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[1] *The History of the American Indians, particularly those Nations adjoining to the Mississippi, Ea and West Florida, Georgia, South and North Carolina, and Virginia: Containing an Account of the Origin, Language, Manners, Religious and Civil Customs, Laws, Form of Government, etc., etc., with a Appendix, containing a Description of the Floridas, and the Missisipi Lands, with their productio* (London, 1775). His arguments are given in Kingsborough's *Mex. Antiq.*, viii. Bancroft (*Nat. Races*, 91) epitomizes them. Adair's book appeared in a German translation at Breslau (1782).

[2] *Observations on the language of the Muhhekaneew Indians, in which . . . some instances of analog between that and the Hebrew are pointed out* (New Haven, 1788). Cf. on the contrary, Jarvis before th N. Y. Hist. Soc. in 1819.

[3] *Essay upon the propagation of the Gospel, in which there are facts to prove that many of the Indians America are descended from the Ten Tribes* (Philad., 1799; 2d ed., 1801).

[4] *A Star in the West, or an attempt to discover the long lost Ten Tribes of Israel* (Trenton, N. J., 181

[5] *View of the Hebrews, or the tribe of Israel in America* (Poultney, Vt., 1825).

[6] *A view of the Amer. Indians, shewing them to be the descendants of the Ten Tribes of Israel* (Lon 1828).

[7] *Discourse on the evidences of the Amer. Indians being the descendants of the lost tribes of Isra* (N. Y., 1837). It is reprinted in Maryatt's *Diary in America*, vol. ii.

[8] *Hist. of the Wyandotte Mission* (Cincinnati, 1840); Thomson's *Ohio Bibliog.*, 409.

[9] *Manners, &c. of the N. Amer. Indians* (Lond., 1841). Cf. *Smithsonian Rept.*, 1885, ii. 532.

[10] Mainly in vol. vii.; but see vi. 232, etc. Cf. Short, 143, 460, and Bancroft, *Nat. Races* (v. 26), with epitome of Kingsborough's arguments (v. 84). Mrs. Barbara Anne Simon in her *Hope of Israel* (Lond., 182 advocated the theory on biblical grounds; but later she made the most of Kingsborough's amassment points in her *Ten Tribes of Israel historically identified with the aborigines of the Western Hemisphe* (London, 1836).

[11] The recognition of the theory in the Mormon bible is well known. Bancroft (v. 97) epitomizes its recit following Bertrand's *Mémoires*. There is a repetition of the old arguments in a sermon, *Increase of the Kin dom of Christ* (N. Y., 1831), by the Indian William Apes; and in *An Address* by J. Madison Brown (Jac son, Miss., 1860). Señor Melgar points out resemblances between the Maya and the Hebrew in the *Bol. S Méx. Geog.*, iii. Even the Western mounds have been made to yield Hebrew inscriptions (*Congrès d Amér.*, Nancy, ii. 192).

Many of the general treatises on the origin of the Americans have set forth the opposing argumen Garcia did it fairly in his *Origen de los Indios* (1607; ed. by Barcía, 1729), and Bancroft (v. 78–84) has co densed his treatment. Brasseur (*Hist. Nat. Civ.*, i. 17) rejects the theory of the ten tribes; but is not inclin to abandon a belief in some scattered traces. Short (pp. 135, 144) epitomizes the claims. Gaffarel cove them in his *Etude sur les rapports de l'Amérique* (p. 87) with references, and these last are enlarged in Ba croft's *Nat. Races*, v. 95–97.

36). Retzius of Stockholm traces resem- ances in the skulls of the Guanches and the aribs (*Smithsonian Rept.*, 1859, p. 266). Le longeon finds the sandals of the statue Chac- ool, discovered by him in Yucatan, to resemble ıose of the Guanches (Salisbury's *Le Plongeon* *Yucatan*, 57).

The African and even Egyptian origin of the Caribs has had some special advocates.[1] Peter Martyr, and Grotius following him, contended for the people of Yucatan being Ethiopian Christians. Stories of blackamoors being found by the early Spaniards are not without corroboration.[2] The correspondence of the African and South American flora has been brought into requisition as confirmatory.[3]

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[1] Varnhagen's *L'origine touranienne des Américains Tupis-Caraïbes et des anciens Egyptiens, indiquée rincipalement par la philologie comparée: traces d'une ancienne migration en Amérique, invasion du résil par les Tupis* (Vienne, 1876). Labat's *Nouveau Voyage aux isles de l'Amérique* (Paris, 1722), vol. ii. ı. 23. Sieur de la Borde's *Relation de l'origine, mœurs, coutumes, etc. des Caraibes* (Paris, 1764). Robert- n's *America*. James Kennedy's *Probable origin of the Amer. Indians, with particular reference to that the Caribs* (Lond., 1854), or *Journal of the Ethnolog. Soc.* (vol. iv.). *London Geog. Journal*, iii. 290.

[2] Cf. Peter Martyr, Torquemada, and later writers, like La Perouse, McCulloh, Haven (p. 48), Gaffarel *Rapport*, 204), J. Perez in *Rev. Orientale et Amér.*, viii., xii.; Bancroft, *Nat. Races*, iii. 458. Brinton (*Ad- ress*, 1887) takes exception to all such views. Cf. Quatrefages' *Human Species* (N. Y., 1879, pp. 200, 202).

[3] Cf. Beccari in *Kosmos*, Apr., 1879; De Candolle in *Géographie botanique* (1855).

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THE CARTOGRAPHY OF GREENLAND.

THE oldest map yet discovered to show any part of Greenland, and consequently of America,[1] is one found y Baron Nordenskjöld attached to a Ptolemy Codex in the Stadtbibliothek at Nancy. He presented a colored c-simile of it in 1883 at the Copenhagen Congrès des Américanistes, in his little brochure *Trois Cartes*. It as also used in illustration of his paper on the Zeni Voyages, published both in Swedish and German. will be seen by the fac-simile given herewith, and marked with the author's name, Claudius Clavus, that Gronlandia Provincia" is an extension of a great arctic region, so as to lie over against the Scandinavian eninsula of Europe, with "Islandia," or Iceland, midway between the two lands. Up to the time of this scovery by Nordenskjöld, the map generally recognized as the oldest to show Greenland is a Genovese por- lano, preserved in the Pitti Palace at Florence, about which there is some doubt as to its date, which is said be 1417 by Santarem (*Hist. de la Cartog.*, iii., p. xix), but Lelewel (*Epilogue*, p. 167) is held to be trustier giving it as 1447.[2] It shows how little influence the Norse stories of their Greenland colonization exerted this time on the cartography of the north, that few of the map-makers deemed it worth while to break the sual terminal circle of the world by including anything west or beyond Iceland. It was, further, not easy to nvince them that Greenland, when they gave it, lay in the direction which the Sagas indicated. The map of ra Mauro, for instance, in 1459 cuts off a part of Iceland by its incorrigible terminal circle, as will be seen a bit of it given herewith, the reader remembering as he looks at it that the bottom of the segment is to the rth.[3] We again owe to Nordenskjöld the discovery of another map of the north, *Tabula Regionum Sep- ntrionalium*, which he found in a Codex of Ptolemy in Warsaw a few years since, and which he places about 167. The accompanying partial sketch is reproduced from a fac-simile kindly furnished by the discoverer. he peninsula of "Gronlandia," with its indicated glaciers, is placed with tolerable accuracy as the western xtremity of an arctic region, which to the north of Europe is separated from the Scandinavian peninsula by a annel from the "Mare Gotticum" (Baltic Sea), which sweeps above Norway into the "Mare Congelatum." he confused notions arising from an attempt by the compiler of the map to harmonize different drafts is own by his drawing a second Greenland ("Engronelant") to his "Norbegia," or Norway, and placing just under it the "Thile"[1] of the ancients, which he makes a different island from "Islandia," placed in proper relations to his larger Greenland.

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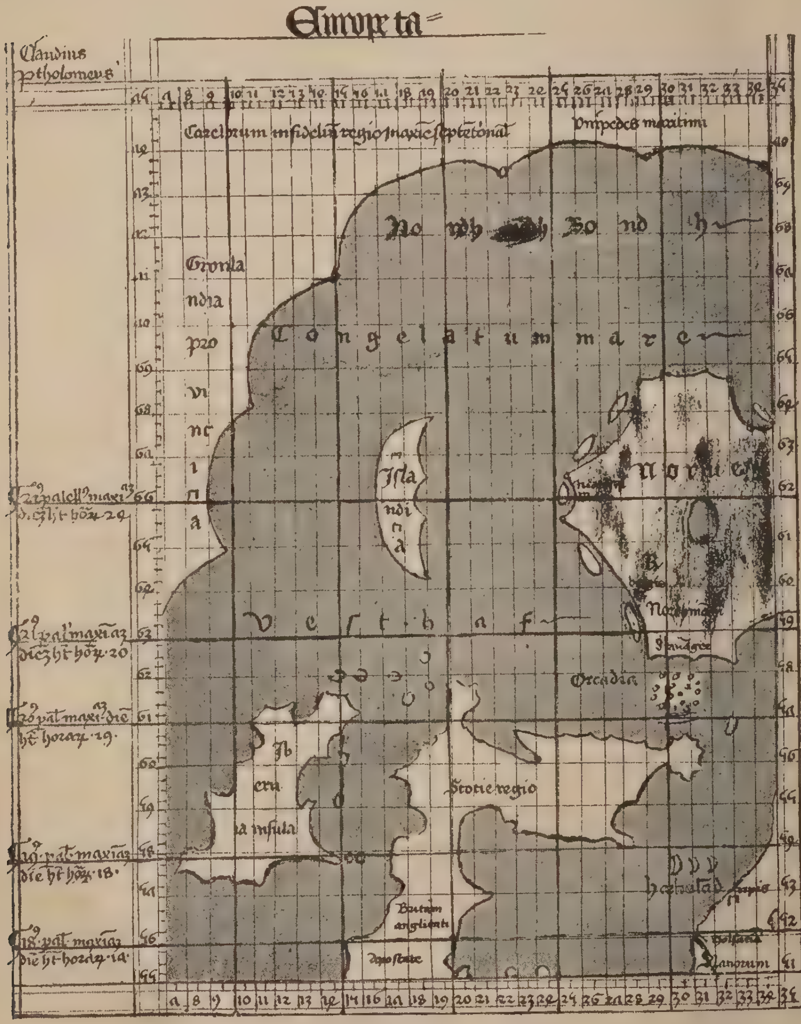
[1] Santarem, *Hist. de la Cartog.*, iii. 76, refers to maps of e fourteenth century in copies of Ranulphus Hydgen's *olychronicon*, in the British Museum and in the Advo- tes' library at Edinburgh, which show a land in the north, lled in the one Wureland and in the other Wyhlandia.

[2] *Mag. Am. Hist.*, April, 1883, p. 290. Cf. Vol. II. p. 28. he name used is "Grinlandia."

[3] Mauro's map was called by Ramusio, who saw it, an nproved copy of one brought from Cathay by Marco olo. It is preserved in the Biblioteca Marciana at Venice. was made by Mauro under the command of Don Alonso ., and Bianco assisted him. The exact date is in dispute; but all agree to place it between 1457 and 1460. A copy was made on vellum in 1804, which is now in the British Museum. Our cut follows one corner of the reproduction in Santarem's *Atlas*. A photographic fac-simile has been issued in Venice by Ongania, and St. Martin (*Atlas*, p. vii) follows this fac-simile. Ruge (*Geschichte des Zeitalters der Entdeckungen*) gives a modernized and more legible reproduction. There are other drawings in Zurla's *Fra Mauro*; Vincent's *Commerce and Navigation of the Ancients* (1797, 1807); Lelewel's *Moyen Age* (pl. xxxiii). Cf. *Studi della Soc. Geografia Italia* (1882), ii. 76, for references.

A few years later, or perhaps about the same time, and before 1471, the earliest engraved map which shows Greenland is that of Nicolas Donis, in the Ulm edition of Ptolemy in 1482. It will be seen from the little sketch which is annexed that the same doubling of Greenland is adhered to.[2] With the usual perversion put



CLAUDIUS CLAVUS, 1427.

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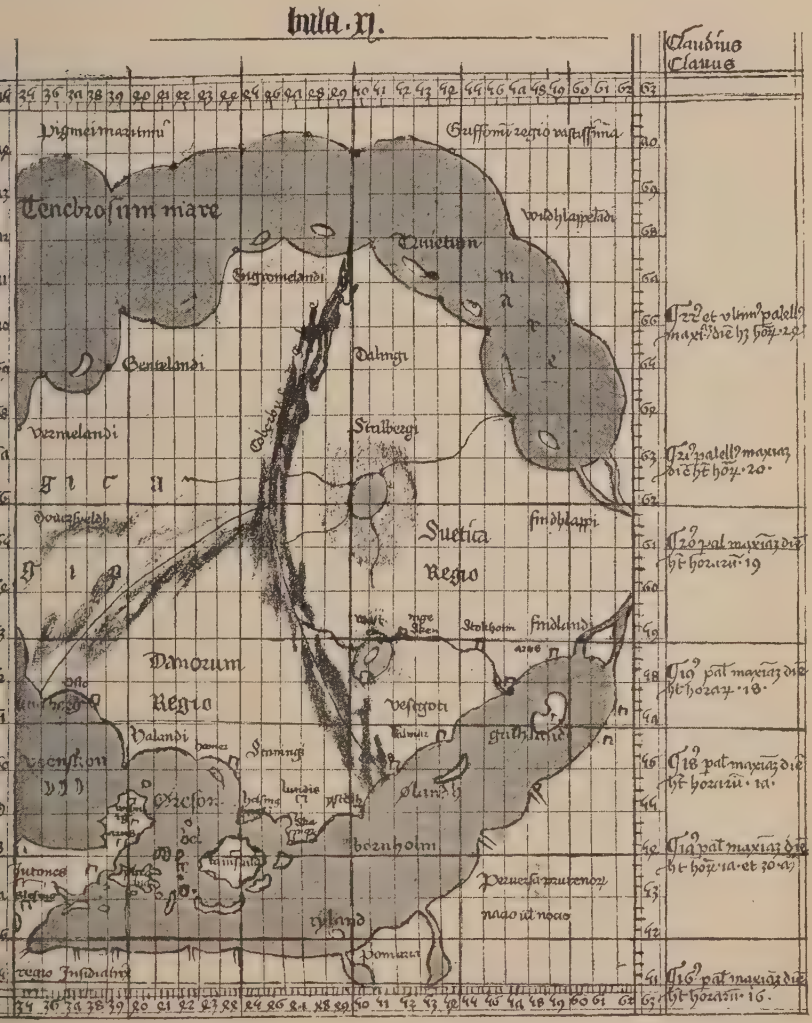
[1] Rafn gives a large map of Iceland with the names of A. D. 1000. On the errors of early and late maps of Iceland see Baring-Gould's *Ultima Thule*, i. 253. On the varying application of the name Thule, Thyle, etc., to the northern regions or to particular parts of them, see R. F. Burton's *Ultima Thule, a Summer in Iceland* (London, 1875), ch. 1. Bunbury (*Hist. Anc. Geog.*, ii. 527) holds that the Thule of Marinus of Tyre and of Ptolemy was the Shetlands. Cf. James Wallace's *Description of the Orkney islands* (1693, — new ed., 1887, by John Small) for an essay on "the Thule of the Ancients."

[2] There are other reproductions of the map in full, in Nordenskjöld's *Vega*, i. 51; in his *Broderna Zenos*, and in his *Studien*, p. 31. Cf. also the present *History*, II., p. 28, for other bibliographical detail; Hassler, *Buchdruckergeschichte Ulm's*; D'Avezac's *Waltzemüller*, 23; Wil-

oon the Norse stories, Iceland is made to lie due west of Greenland, though not shown in the present etch.

At a date not much later, say 1486, it is supposed the Laon globe, dated in 1493, was actually made, or at ast it is shown that in some parts the knowledge was rather of the earlier date, and here we have "Grolan- a," a small island off the Norway coast.[1]



CLAUDIUS CLAVUS, 1427.

We have in 1489–90 a type of configuration, which later became prevalent. It is taken from an *Insularium lustratum Henrici Martelli Germani,* a manuscript preserved in the British Museum, and shows, as seen by e annexed extract, a long narrow peninsula, running southwest from the northern verge of Europe. A sketch the whole map is given elsewhere.[2]

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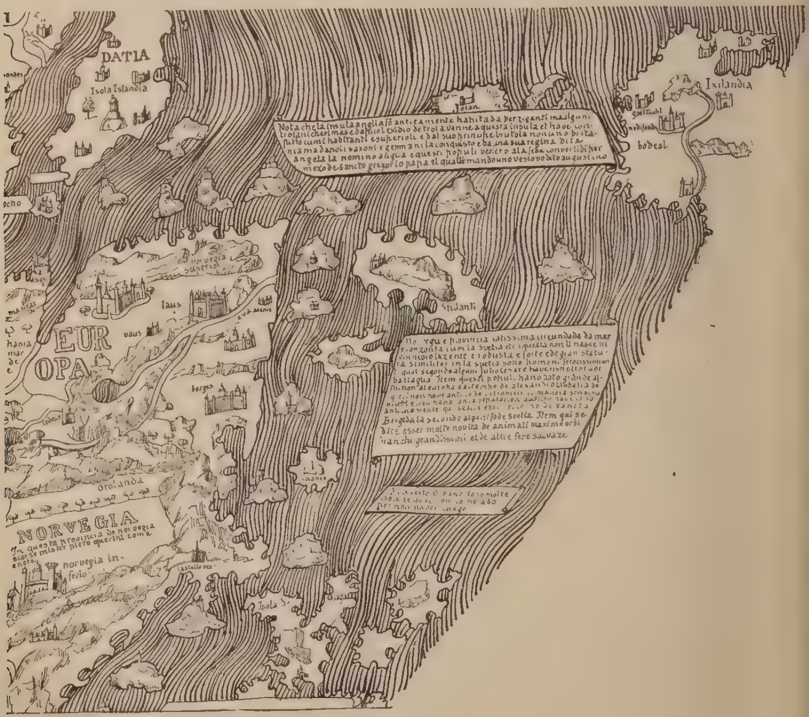
erforce Eames's *Bibliography of Ptolemy*, separately, nd in Sabin's *Dictionary*; and Winsor's *Bibliog. of tolemy's Geography*.

[1] Cf. D'Avezac in *Bull. de la Soc. de Géog.*, xx. 417.

[2] See Vol. II. p. 41. There is another sketch in Nordenskjöld's *Studien*, etc., p. 33, which is reduced from a

This seems to have been the prevailing notion of what and where Greenland was at the time of Columbus' voyage, and it could have carried no significance to his mind that the explorations of the Norse had found the Asiatic main, which he started to discover. How far this notion was departed from by Behaim in his globe of 1492 depends upon the interpretation to be given to a group of islands, northwest of Iceland and northeast of Asia, upon the larger of which he writes among its mountains, "Hi man weise Volker."[1]

As this sketch of the cartographical development goes on, it will be seen how slow the map-makers were to perceive the real significance of the Norse discoveries, and how reluctant they were to connect them with the discoveries that followed in the train of Columbus, though occasionally there is one who is possessed with a sort of prevision. The Cantino map of 1502[2] does not settle the question, for a point lying northeast of the Portuguese discoveries in the Newfoundland region only seems to be the southern extremity of Greenland. What was apparently a working Portuguese chart of 1503 grasps pretty clearly the relations of Greenland to Labrador.[3]



FRA MAURO, 1459.

Lelewel (pl. 43), in a map made to show the Portuguese views at this time,[4] which he represents by combining and reconciling the Ptolemy maps of 1511 and 1513, still places the "Gronland" peninsula in the northwest of Europe, and if his deductions are correct, the Portuguese had as yet reached no clear conception that the Labrador coasts upon which they fished bore any close propinquity to those which the Norse had colonized. Ruysch, in 1508, made a bold stroke by putting "Gruenlant" down as a peninsula of Northeastern Asia, thus trying to reconcile the discoveries of Columbus with the northern sagas.[5] This view was far from acceptable. Sylvanus, in the Ptolemy of 1511, made "Engroneland" a small protuberance on the north shore of Scandinavia, and east of Iceland, evidently choosing between the two theories instead of accepting both, as

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fac-simile given in José de Lacerda's *Exame dos Viagens do Doutor Livingstone* (Lissabon, 1867). The present extract is from Santarem, pl. 50. Cf. O. Peschel in *Ausland*, Feb. 13, 1857, and his posthumous *Abhandlungen*, i. 213.

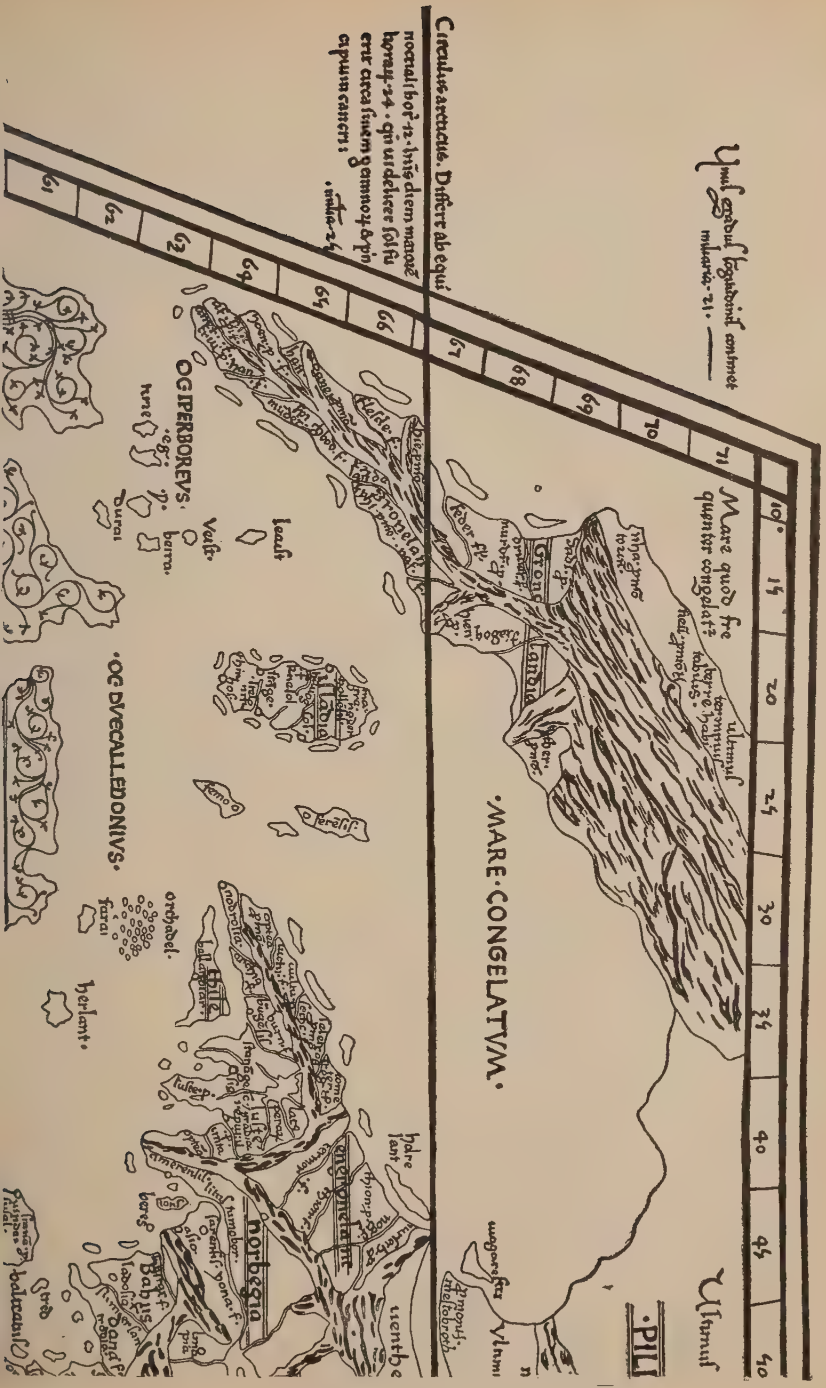
[1] See references in Vol. II. p. 105.

[2] See Vol. II. p. 108.

[3] See *post*, Vol. IV. p. 35; and Kohl's *Discovery of Maine*, p. 174. Cf. Winsor's *Bibliog. of Ptolemy*, sub anno 1511.

[4] He holds that the 1513 Ptolemy map was drawn in 1501–4, and was engraved before Dec. 10, 1508.

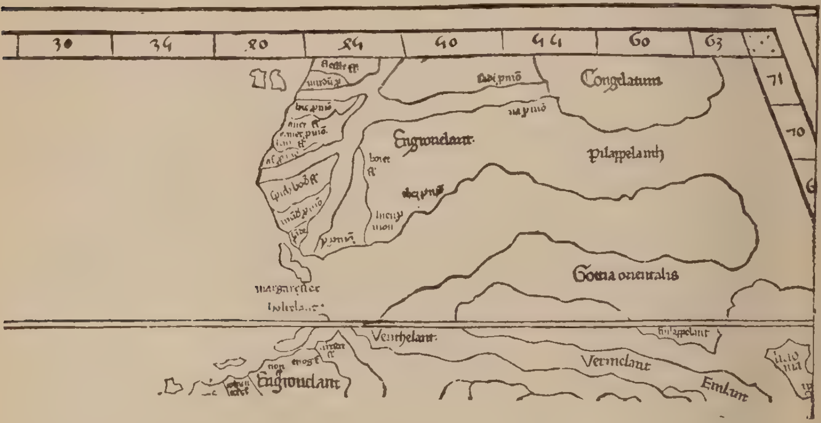
[5] See Vol. II. p. 115.



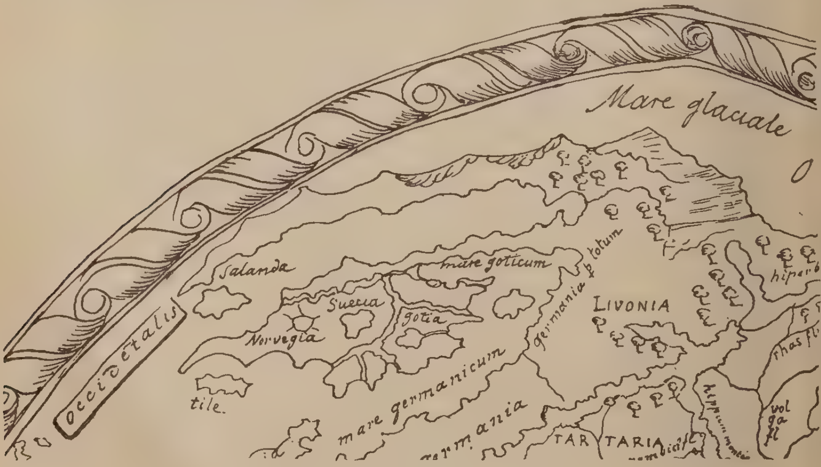
TABULA REGIONUM SEPTENTRIONALIUM, 1467.

was common, in ignorance of their complemental relations.[1] Waldseemüller, in the Ptolemy of 1513, in his "Orbis typus universalis," reverted to and adopted the delineation of Henricus Martellus in 1490.[2]

In 1520, Apian, in the map in Camer's *Solinus*, took the view of Sylvanus, while still another representation was given by Laurentius Frisius in 1522, in an edition of Ptolemy,[3] in which "Gronland" becomes a large island on the Norway coast, in one map called "Orbis typus Universalis," while in another map, "Tabula nova Norbegiæ et Gottiæ," the "Engronelant" peninsula is a broad region, stretching from Northwestern Europe.[4] This Ptolemy was again issued in 1525, repeating these two methods of showing Greenland already given, and adding a third,[5] that of the long narrow European peninsula, already familiar in earlier maps — the variety of choice indicating the prevalent cartographical indecision on the point.



DONIS, 1482.



HENRICUS MARTELLUS, 1489–90.

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[1] Winsor's *Bibliog. of Ptolemy*, sub anno 1511.

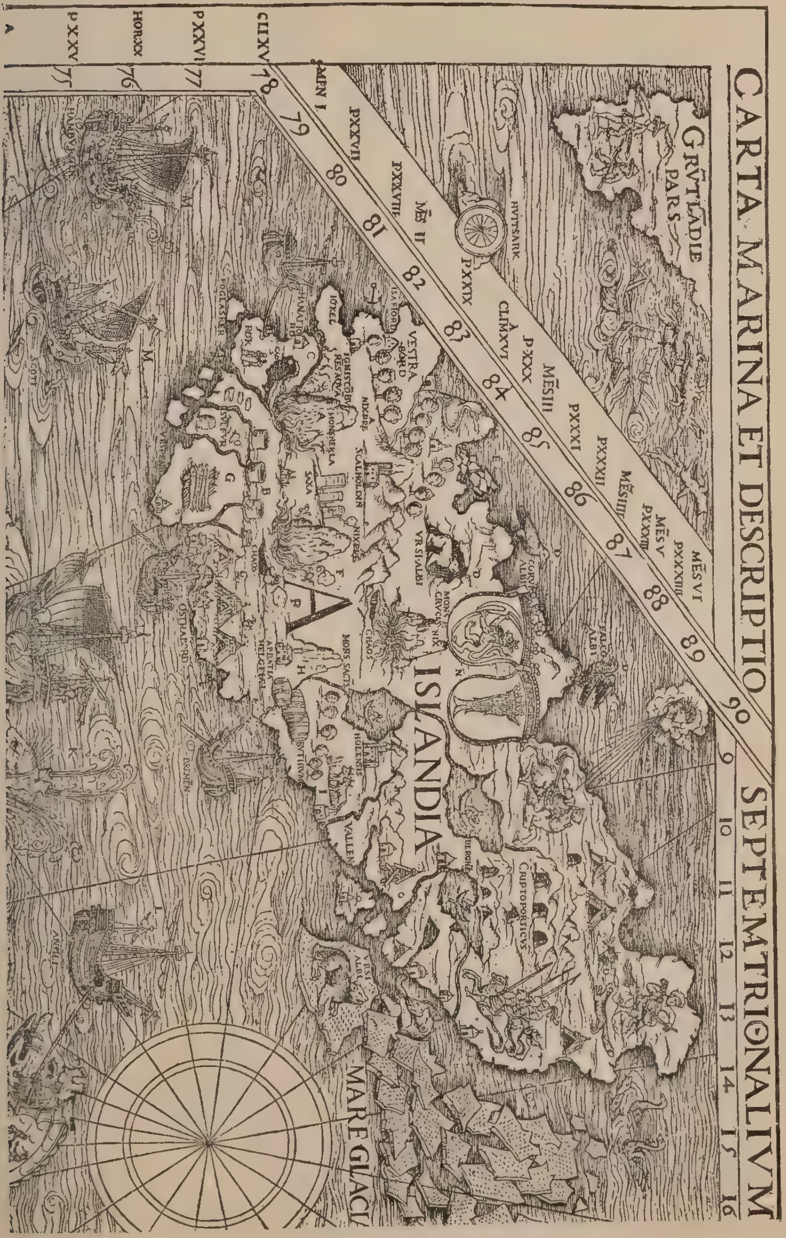
[2] See Vol. II. p. 111. Winsor's *Ptolemy*, sub anno 1513. Reisch, in 1515, seems to have been of the same opinion. Cf. the bibliography of Reisch's *Margarita Philosophia* in Sabin's *Dictionary*, vol. xvi., and separately, prepared by Wilberforce Eames. Reisch's map is given *post*, Vol. II. p. 114. Another sketch of this map, with an examination of the question, where the name "Zoana Mela," applied on it to America, came from, is given by Frank Wieser in the *Zeitschrift für Wissensch. Geographie* (Carlsruhe), vol. v., a sight of which I owe to the author, who believes Waldseemüller made the map.

[3] The map is given, *post*, Vol. II. 175. Cf. also Nordenskjöld, *Studien*, p. 53.

[4] Cf. Winsor's *Bibliog. of Ptolemy*, sub anno 1522.

[5] Winsor's *Bibliog. of Ptolemy*, sub anno 1525. This

Kohl, in his collection of maps,[1] copies from what he calls the Atlas of Frisius, 1525, still another map hich apparently shows the southern extremity of Greenland, with "Terra Laboratoris," an island just west



OLAUS MAGNUS, 1539.*

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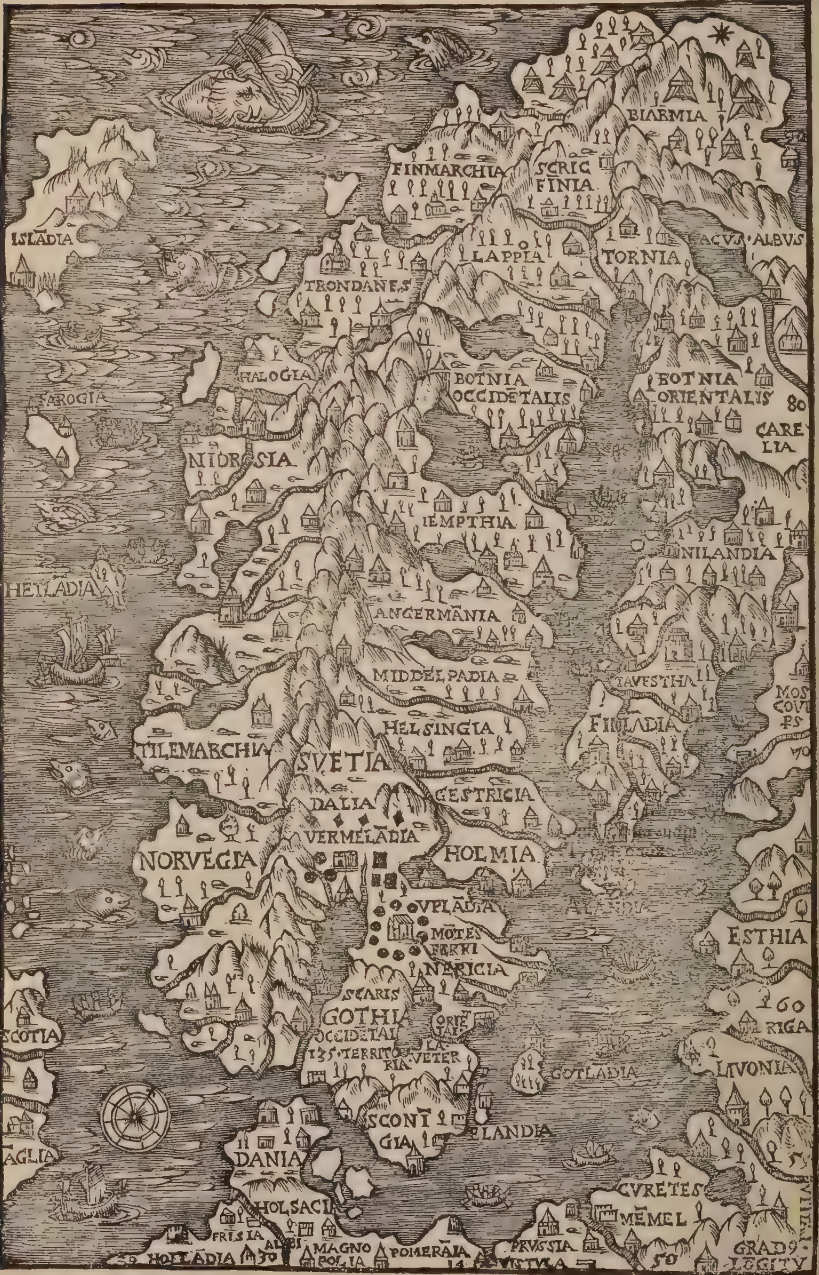
map is no. 49, "Gronlandiæ et Russiæ." Cf. Witsen's *Noord en Oost Tartarye* (1705), vol. ii.

[1] Winsor's *Kohl Collection*, no. 102.

* See NOTE, p. 125.



OLAUS MAGNUS, 1555.*

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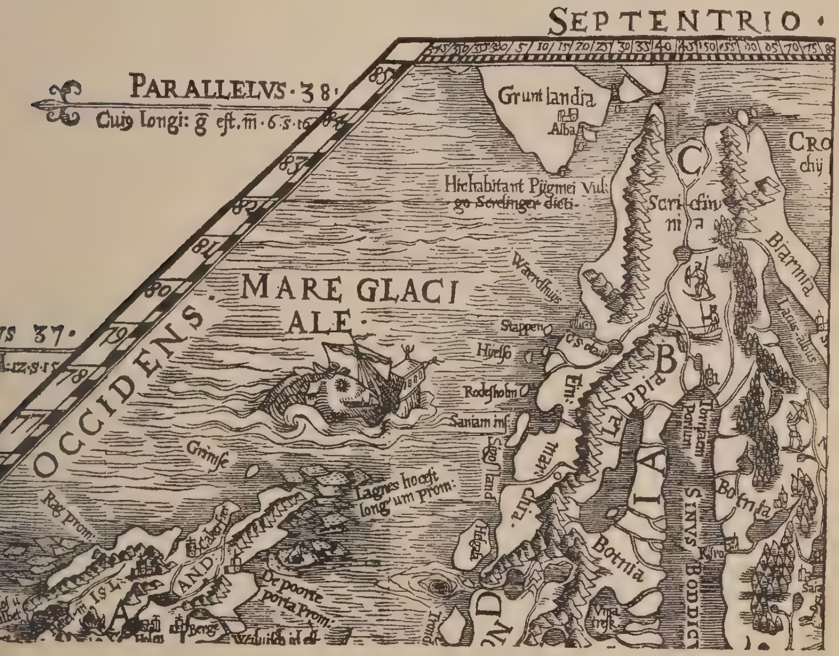
* This map, here reproduced on a somewhat smaller scale, is called: *Regnorum Aquilonarum descriptio, hujus Operis subiectum.*

of it, and southwest of that a bit of coast marked "Terra Nova Conterati," which may pass for Newfoundland and the discoveries of Cortereal.

Thorne, the Englishman, in the map which he sent from Seville in 1527,[1] seems to conform to the view which made Greenland a European peninsula, which may also have been the opinion of Orontius Finæus in 1531.[2] A novel feature attaches to an Atlas, of about this date, preserved at Turin, in which an elongated Greenland is made to stretch northerly.[3] In 1532 we have the map in Ziegler's *Schondia*, which more nearly resembles the earliest map of all, that of Claudius Clavus, than any other.[4] The 1538 cordiform map of Mercator makes it a peninsula of an arctic region connected with Scandinavia.[5] This map is known to me only through a fac-simile of the copy given in the *Geografia* of Lafreri, published at Rome about 1560, with which I am favored by Nordenskjöld in advance of its publication in his *Atlas*.

The great *Historia* of Olaus Magnus, as for a long time the leading authority on the northern geography, as well as on the Scandinavian chronicles, gives us some distinct rendering of this northern geographical problem. It was only recently that his earliest map of 1539 has been brought to light, and a section of it is here reproduced from a much reduced fac-simile kindly sent to the editor by Dr. Oscar Brenner of the university at Munich.* Nordenskjöld, in giving a full fac-simile of the Olaus Magnus map of 1567,[6] of which a



FROM OLAUS MAGNUS' HISTORIA, 1567.

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[1] Given *post*, Vol. III. p. 17.

[2] Given *post*, Vol. III. p. 11.

[3] *Jahrb. des Vereins für Erdkunde in Dresden* (1870), ab. vii. A similar feature is in the map described by Peschel in the *Jahresbericht des Vereins für Erdkunde in Leipzig* (1871). It is also to be seen in the Homem map of bout 1540 (given in Vol. II. p. 446), and in the map which Major assigns to Baptista Agnese, and which was published n Paris in 1875 as a *Portulan de Charles Quint*. (Cf. Vol. I. p. 445.)

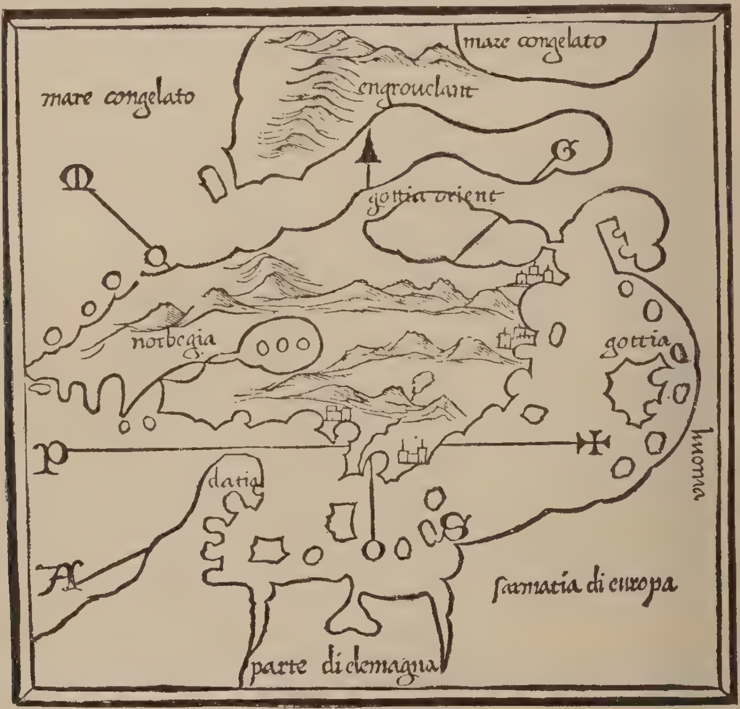
[4] There is a fac-simile of Ziegler's map in Vol. II. 434; also in Goldsmid's ed. of Hakluyt (Edinb., 1885), and in Nordenskjöld's *Vega*, i. 52.

[5] The map (1551) of Gemma Frisius in Apian is much the same.

[6] In the Basle ed. of the *Historia de Gentium*. Cf. Nordenskjöld's *Vega*, vol. i., who says that the map originally appeared in Magnus's *Auslegung und Verklarung der Neuen Mappen von den Alten Gottenreich* (Venice, 1539); and is different from the map which appeared in the intermediate edition of 1555 at Rome, a part of which is also annexed.

Note to Map on p. 123.—This fac-simile accompanies a paper appearing in the *Videnskabsselskabs Forhandinger* 1886, no. 15) and separately as *Die ächte karte des Olaus Magnus vom jahre 1539, nach dem exemplar der Münchener Staatsbibliothek* (Christiania, 1886). In this Dr. Brenner traces the history of the great map of Archbishop Olaus Magnus, pointing out how Nordenskjöld is in error in supposing the map of 1567, which that scholar gives, was but a fragment is herewith also given in fac-simile, says that it embodies the views of the northern geographers in separating Greenland from Europe, which was in opposition to those of the geographers of the south of Europe, who united Greenland to Scandinavia. Sebastian Münster in his 1540 edition of Ptolemy introduced a new confusion. He preserved the European elongated peninsula, but called it "Islandia," while to what stands for Iceland is given the old classical name of Thyle.[1] This confusion is repeated in his map of 1545,[2] where he makes the coast of "Islandia" continuous with Baccalaos. This continuity of coast line seemed now to become a common heritage of some of the map-makers,[3] though in the Ulpius globe of 1542 "Groestlandia," so far as it is shown, stands separate from either continent,[4] but is connected with Europe according to the early theory in the *Isolario* of Bordone in 1547.

We have run down the main feature of the northern cartography, up to the time of the publication of the Zeno map in 1558. The chief argument for its authenticity is that there had been nothing drawn and published up to that time which could have conduced, without other aid, to so accurate an outline of Greenland as it gives. In an age when drafts of maps freely circulated over Europe, from cartographer to cartographer, in



BORDONE'S SCANDINAVIA, 1547.*

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[1] The same is done in the Ptolemy of 1548 (Venice). There is a fac-simile in Nordenskjöld's *Studien*, p. 35.

[2] See Vol. IV. p. 84.

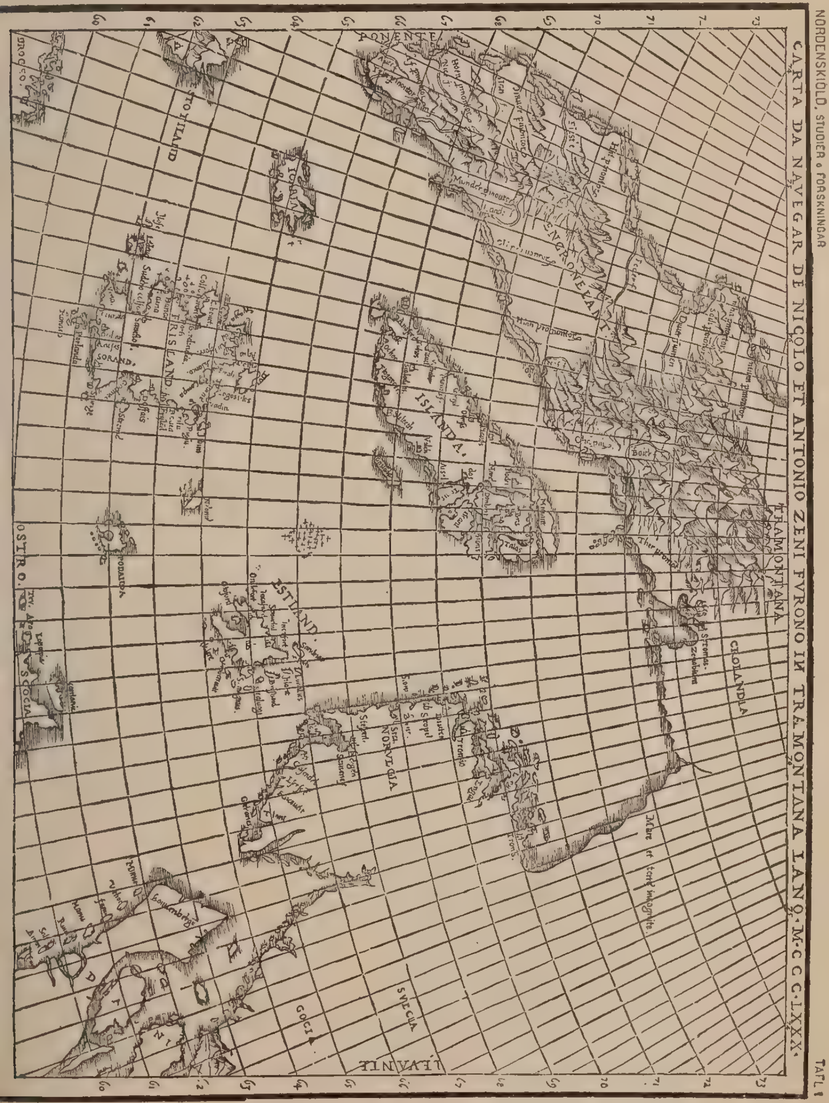
[3] We find it in the Nancy globe of about 1540 (see Vol. IV. p. 81); in the Mercator gores of 1541 (Vol. II. p. 177); and in the Ruscelli map of 1544 (Vol. II. p. 432), where Greenland (Grotlandia) is simply a neck connecting Europe with America; and in Gastaldi "Carta Marina," in the Italian Ptolemy of 1548, where it is a protuberance on a similar neck (see Vol. II. 435; IV. 43; and Nordenskjöld's *Studien*, 43). The Rotz map of 1542 seems to be based on the same material used by Mercator in his gores, but he adds a new confusion in calling Greenland the "Cost of Labrador." Cf. Winsor's *Kohl Maps*, no. 104. The "Grutlandia" of the Vopellio map of 1556 is also continuous with Labrador (see Vol. II. 436; IV. 90).

[4] See Vol. IV. pp. 42, 82.

reproduction of the original edition of 1539, which was not known to modern students till Brenner found it in the library at Munich, in March, 1886, and which proves to be twelve times larger than that of 1567. Brenner adds the long Latin address, "Olaus Gothus benigno lectori salutem," with annotations. The map is entitled "Carta Marina et descriptio septentrionalium errarum ac mirabilium rerum in eis contentarum diligentissime elaborata, Anno Dni, 1539." Brenner institutes a close comparison between it and the Zeno chart.

* Reproduced from the fac-simile given in Nordenskjöld's *Studien* (Leipzig, 1885).

anuscript, it does not seem necessary that the search for prototypes or prototypic features should be confined those which had been engraved. With these allowances the map does not seem to be very exceptional in ny feature. It is connected with northwestern Europe in just the manner appertaining to several of the rlier maps. Its shape is no great improvement on the map of 1467, found at Warsaw. There was then



ZENO MAP. (*Reduced.*)*

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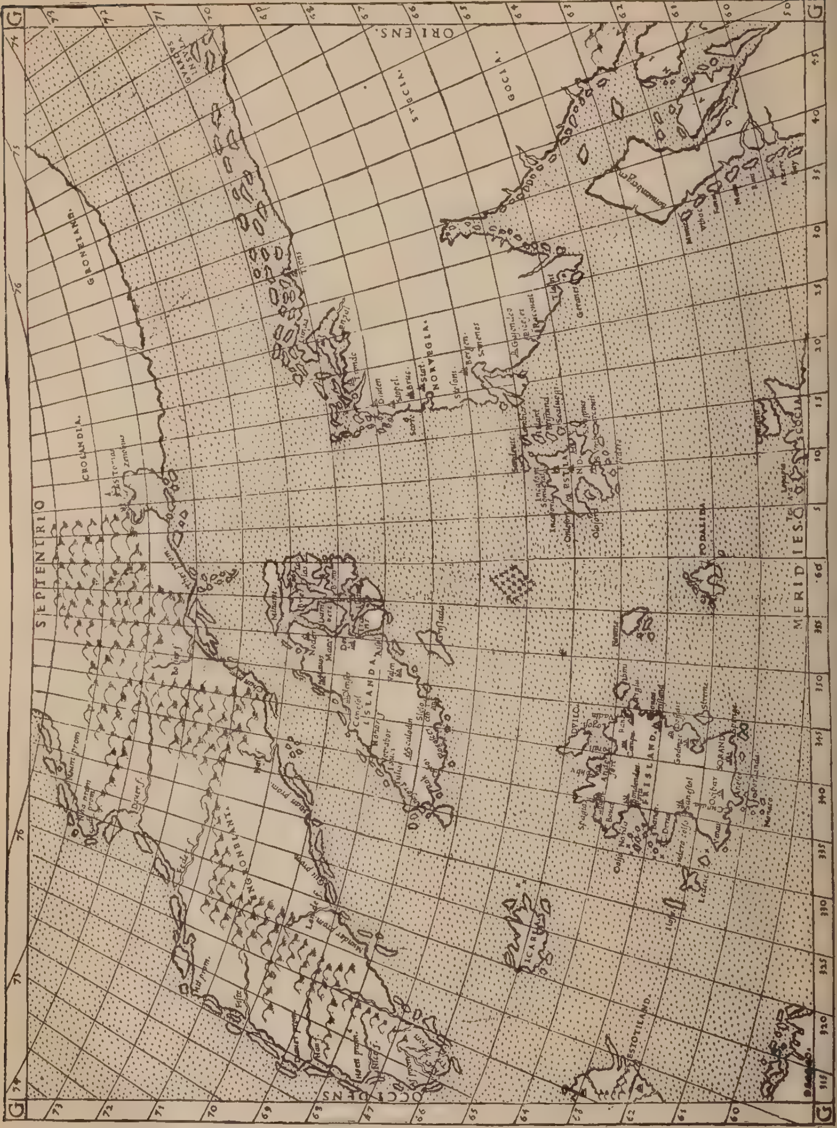
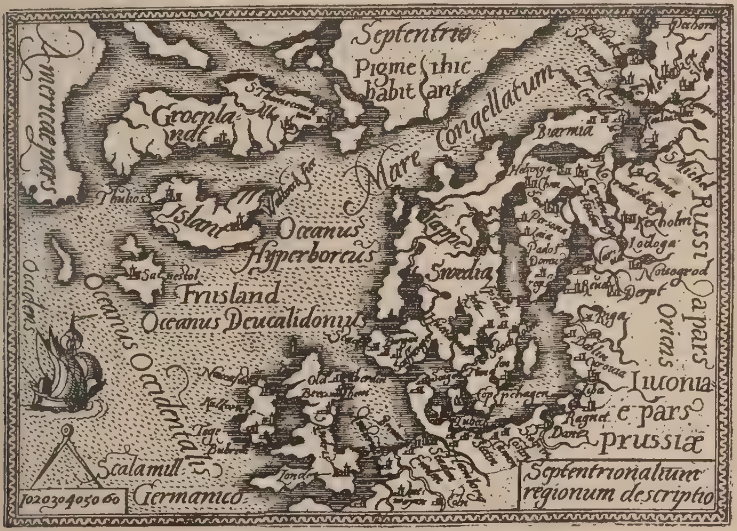
* The original measures 12×15½ inches. Fac-similes of the original size or reduced, or other reproductions, will be found n Nordenskjöld's *Trois Cartes*, and in his *Studien*; Malte Brun's *Annales des Voyages*; Lelewel's *Moyen Age* (ii. 69); *Carter-Brown Catalogue* (i. 211); Kohl's *Discovery of Maine*, 97; Ruge's *Geschichte des Zeitalters der Entleckungen*, p. 27; Bancroft's *Central America*, i. 81; Gay's *Pop. Hist. U. S.*, i. 84; Howley's *Ecclesiast. Hist. Newoundland*, p. 45; Erizzo's *Le Scoperte Artiche* (Venice, 1855), — not to name others.



THE PTOLEMY ALTERATION (1561, etc.) OF THE ZENO MAP.

such constancy in the placing of midsea islands in maps, to interdict the random location of other islands he cartographer's will, without disturbing what at that day would have been deemed geographical proba- ties, and there was all the necessary warranty in existing maps for the most wilfully depicted archipelago. e early Portuguese charts, not to name others, gave sufficient warrant for land where Estotiland and Drogeo ear.

Mention has already been made of the changes in this map, which the editors of the Ptolemy of 1561 made severing Greenland from Europe, when they reëngraved it.[1] The same edition contained a map of "Schon- dia," in which it seems to be doubtful if the land which stands for Greenland does, or does not, connect h the Scandinavian main.[2] That Greenland was an island seems now to have become the prevalent opinion, it was enforced by the maps of Mercator (1569 and 1587), Ortelius (1570, 1575), and Gallæus (1585), ch placed it lying mainly east and west between the Scandinavian north and the Labrador coast, which it s now the fashion to call Estotiland. In its shape it closely resembled the Zeni outline. Another feature of se maps was the placing of another but smaller island west of "Groenlant," which was called "Grocland," which seems to be simply a reduplication of the larger island by some geographical confusion,[3] which e started was easily seized upon to help fill out the arctic spaces.[4]



SEPTENTRIONALES REGIONES.*

It was just at this time (1570) that the oldest maps which display the geographical notions of the saga men re drawn, though not brought to light for many years. We note two such of this time, and one of a date r forty years later. One marked "Jonas, Gudmundi filius, delineavit, 1570," is given as are the two others Torfæus in his *Gronlandia Antiqua.* They all seem to recognize a passage to the Arctic seas between rway and Greenland, the northern parts of which last are called "Risaland," or "Riseland," and Jonas ces "Oster Bygd" and "Wester Bygd" on the opposite sides of a squarish peninsula. Beyond what must Davis' Straits is "America," and further south "Terra Florida" and "Albania."

If this description is compared with the key of Stephanius' map, next to be mentioned, while we remember that both represent the views prevailing in the north in 1570, it is hard to resist the conclusion that Vinland was north even of Davis' Straits, or at least held to be so at that time.

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[1] In the edition of 1562, which repeated the map, the tographer Moletta (Moletius) testified that its geography l been confirmed "by letters and marine charts sent to from divers parts."

[2] Winsor's *Bibliog. of Ptolemy*, sub anno 1561.

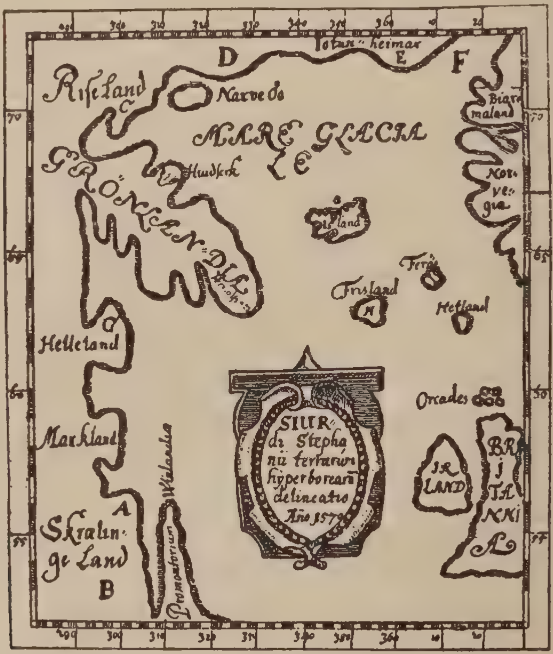
[3] Lok's map of 1582 calls it "Groetland," the landfall "Jac. Scolvus," the Pole. Cf. Vol. III. 40.

[4] For Mercator's map, see Vol. II. 452; IV. 94, 373. telius' separate map of Scandia is much the same. It is same with the map of Phillipus Gallæus, dated 1574, but blished at Antwerp in 1585 in the *Theatri orbis terrarum Enchiridion.* Gilbert's map in 1576 omits the "Grocland" (Vol. III. 203). Both features, however, are preserved in the Judæis of 1593 (Vol. IV. 97), in the Wytfliet of 1597 (Vol. II. 459), in Wolfe's Linschoten in 1598 (Vol. III. 101), and in Quadus in 1600 (Vol. IV. 101). In the Zaltière map of 1566 (Vol. II. 451; IV. 93), in the Porcacchi map of 1572 (Vol. II. 96, 453; IV. 96), and in that of Johannes Martines of 1578, the features are too indefinite for recognition. Lelewel (i. pl. 7) gives a Spanish mappemonde of 1573.

* From *Theatri orbis Terrarum Enchiridion, per Phillipum Gallæum, et per Hugonem Favolium* (Antwerp, 1585).

The second map, that of Stephanius, is reproduced herewith, dating back to the same period (1570); but the third, by Gudbrandus Torlacius, was made in 1606, and is sketched in Kohl's *Discovery of Maine* (p. 109). It gives better shape to "Gronlandia" than in either of the others.

It is not necessary to follow the course of the Greenland cartography farther with any minuteness. As the sixteenth century ended we have leading maps by Hakluyt in 1587 and 1599 (see Vol. III. 42), and De Bry in 1596 (Vol. IV. 99), and Wytfliet in 1597, all of which give Davis's Straits with more or less precision. Barentz's map of 1598 became the exemplar of the circumpolar chart in Pontanus' *Rerum et Urbis Amstelodamensium Historia* of 1611.[1] The chart of Luke Fox, in 1635, marked progress [2] better than that of La Pey-



SIGURD STEPHANIUS, 1570.*

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[1] In fac-simile in Nordenskjöld's *Vega*, i. 247.

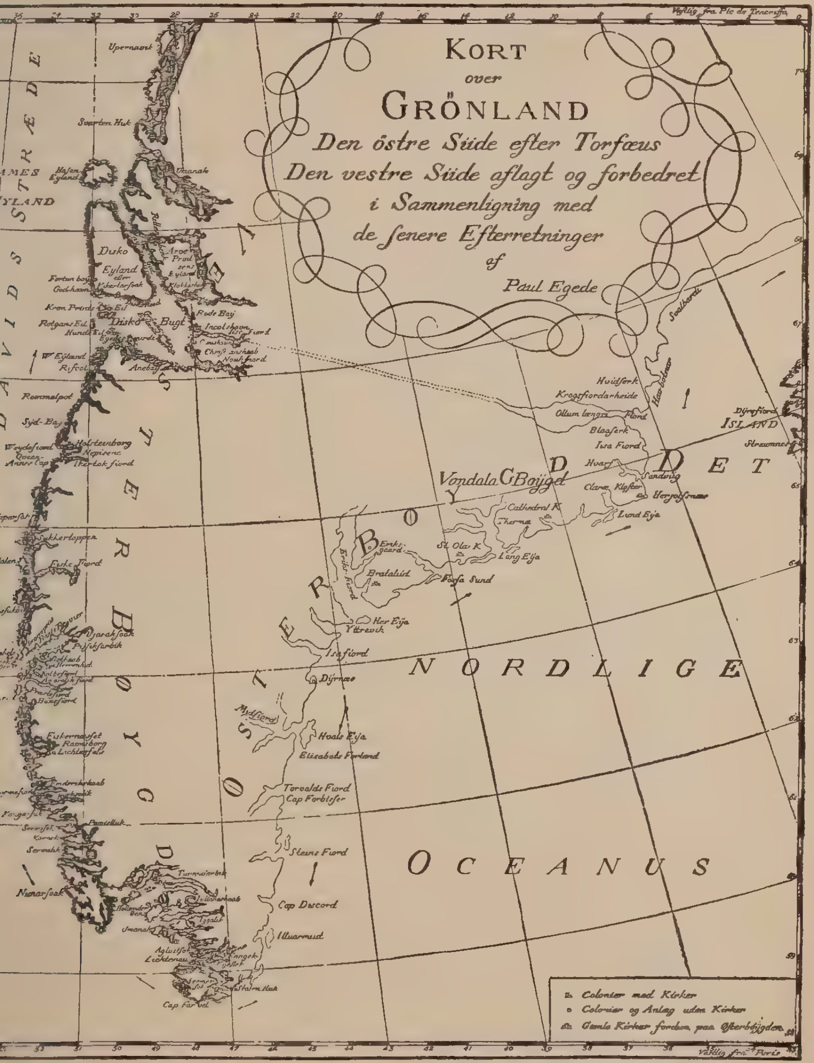
[2] Vol. III. p. 98.

* Reproduced from the *Saga Time* of J. Fulford Vicary (London, 1887), after the map as given in the publication o the geographical society at Copenhagen, 1885–86, and it is supposed to have been drafted upon the narrative of the sagas KEY: "*A*. This is where the English have come and has a name for barrenness, either from sun or cold. *B*. This i near where Vineland lies, which from its abundance of useful things, or from the land's fruitfulness, is called Good. Ou countrymen (Icelanders) have thought that to the south it ends with the wild sea and that a sound or fjord separates i from America. *C*. This land is called Rüseland or land of the giants, as they have horns and are called Skrickfinn (Fins that frighten). *D*. This is more to the east, and the people are called Klofinna (Fins with claws) on account o their large nails. *E*. This is Jotunheimer, or the home of the misshapen giants. *F*. Here is thought to be a fjord, o sound, leading to Russia. *G*. A rocky land often referred to in histories. *H*. What island that is I do not know, unles it be the island that a Venetian found, and the Germans call Friesland."

It will be observed under the *B* of the Key, the Norse of 1570 did not identify the Vinland of 1000 with the America o later discoveries.

This map is much the same, but differs somewhat in detail, from the one called of Stephanius, as produced in Kohl' *Discovery of Maine*, p. 107, professedly after a copy given in Torfæus' *Gronlandia Antiqua* (1706). Torfæus quote Theodorus Torlacius, the Icelandic historian, as saying that Stephanius appears to have drawn his map from ancient Icelandic records. The other maps given by Torfæus are: by Bishop Gudbrand Thorlakssen (1606); by Jonas Gudmun (1640); by Theodor Thorlakssen (1666), and by Torfæus himself. Cf. other copies of the map of Stephanius in Malte Brun's *Annales des Voyages*, Weise's *Discoveries of America*, p. 22; *Geog. Tidskrift*, viii. 123, and in Horsford' *Disc. of America by Northmen*, p. 37.

e (1647), though his map was better known.[1] Even as late as 1727, Hermann Moll could not identify his reenland" with "Groenland." In 1741, we have the map of Hans Egede in his "Grönland," repeated in

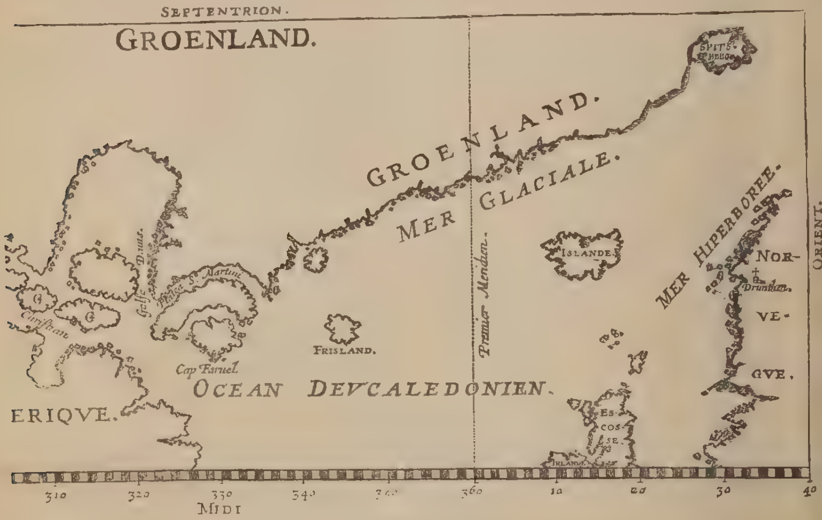


A paper by H. Rink in the *Geografisk Tidskrift* (viii.) entitled "Ostgrönländerne i deres Forhold till Vest-nländerne og de övrige Eskimostammer," is accompa-d by drafts of the map of G. Tholacius, 1606, and of Th. orlacius, 1668–69, — the latter placing East Bygd on the t coast near the south end. K. J. V. Steenstrup, on Osterbygden in *Geog. Tidskrift*, viii. 123, gives fac-similes of maps of Jovis Carolus in 1634; of Hendrick Doncker in 1669. Sketches of maps by Johannes Meyer in 1652, and by Hendrick Doncker in 1666, are also given in the *Geografisk Tidskrift*, viii. (1885), pl. 5.

NOTE. — The annexed map is a reduced fac-simile of the map in the *Efterretninger om Grönland uddragne af en urnal holden fra 1771 til 1788*, by Paul Egede (Copenhagen, 1789). Paul Egede, son of Hans, was born in 1708, and ained in Greenland till 1740. He was made Bishop of Greenland in 1770, and died in 1789. The above book gives ortrait. There is another fac-simile of the map in Nordenskjöld's *Exped. till Grönland*, p. 234.

late editions, and the old delineation of the east coast after Torfæus was still retained in the 1788 map of Paul Egede.

In the map of 1653, made by De la Martinière, who was of the Danish expedition to the north, Greenland was made to connect with Northern Asia by way of the North pole.[1] Nordenskjöld calls him the Münchhausen of the northeast voyagers; and by his own passage in the "Vega," along the northern verge of Europe, from one ocean to the other, the Swedish navigator has of recent years proved for the first time that Greenland has no such connection. It yet remains to be proved that there is no connection to the north with at least the group of islands that are the arctic outlyers of the American continent.



GREENLAND.*

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[1] *Voyages des Pais Septentrionaux,* — a very popular book.

* Extracted from the "Carte de Grœnland" in Isaac de la Peyrère's *Relation du Groenland* (Paris, 1647). Cf. Winsor's *Kohl Maps*, no. 122.

CHAPTER III.

MEXICO AND CENTRAL AMERICA.

BY JUSTIN WINSOR.

THE traditions of the migrations of the Chichimecs, Colhuas, and Nahuas," says Max Müller,[1] "are no better than the Greek traditions bout Pelasgians, Æolians, and Ionians, and it would be a mere waste of ime to construct out of such elements a systematic history, only to be estroyed again, sooner or later, by some Niebuhr, Grote, or Lewis."

"It is yet too early," says Bandelier,[2] "to establish a definite chronology, unning farther back from the Conquest than two centuries,[3] and even within that period but very few dates have been satisfactorily fixed."

Such are the conditions of the story which it is the purpose of this chaper to tell.

We have, to begin with, as in other history, the recognition of a race of giants, convenient to hang legends on, and accounted on all hands to have een occupants of the country in the dimmest past, so that there is nothing ack of them. Who they were, whence they came, and what stands for heir descendants after we get down to what in this pre-Spanish history we ather presumptuously call historic ground, is far from clear. If we had he easy faith of the native historian Ixtlilxochitl, we should believe that hese gigantic Quinames, or Quinametin, were for the most part swallowed up in a great convulsion of nature, and it was those who escaped which the Olmecs and Tlascalans encountered in entering the country.[4] If all this means anything, which may well be doubted, it is as likely as not that these giants were the followers of a demi-god, Votan,[5] who came from over-sea to

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[1] *Chips from a German Workshop*, i. 327.

[2] *Archæological Tour*, p. 202.

[3] The earliest fixed date for the founding of Tenochtitlan (Mexico city) is 1325. Brasseur tells us that Carlos de Sigüenza y Gongora nade the first chronological table of ancient Mexican dates, which was used by Boturini, and was improved by Leon y Gama, — the same which Bustamante has inserted in his edition of Gomara. Gallatin (*Amer. Ethnol. Soc. Trans.*, i.) gave a composite table of events by dates before the Conquest, which is followed in Brantz Mayer's *Mexico as it was*, i. 97. Ed. Madier de Montjau, in his *Chronologie hiéroglyphico-phonétique des Rois Astèques de 1352 à 1522*, takes issue with Ramirez on some points.

[4] Bancroft (v. 199) gives references to those writers who have discussed this question of giants. Bandelier's references are more in detail (*Arch. Tour*, p. 201). Short (p. 233) borrows largely the list in Bancroft. The enumeration includes nearly all the old writers. Acosta finds confirmation in bones of incredible largeness, often found in his day, and then supposed to be human. Modern zoölogists say they were those of the Mastodon. Howarth, *Mammoth and the Flood*, 297.

[5] See *Native Races*, ii. 117; v. 24, 27.

America,[1] found it peopled, established a government in Xibalba, — if suc a place ever existed, — with the germs of Maya if not of other civilizations whence, by migrations during succeeding times, the Votanites spread nort and occupied the Mexican plateau, where they became degenerate, doubtless, if they deserved the extinction which we are told was in store fo them. But they had an alleged chronicler for their early days, the write of the Book of Votan, written either by the hero himself or by one of hi descendants, — eight or nine generations in the range of authorship making little difference apparently. That this narrative was known to Francisco Nuñez de la Vega[2] would seem to imply that somebody at that tim had turned it into readable script out of the unreadable hieroglyphics, whil the disguises of the Spanish tongue, perhaps, as Bancroft[3] suggests, ma have saved it from the iconoclastic zeal of the priests. When, later, Ramo de Ordoñez had the document, — perhaps the identical manuscript, — it consisted of a few folios of quarto paper, and was written in Roman script i the Tzendal tongue, and was inspected by Cabrera, who tells us somethin of its purport in his *Teatro critico Americano*, while Ramon himself was a the same time using it in his *Historia del Cielo y de la Tierra*. It was fro a later copy of this last essay, the first copy being unknown, that the Abb Brasseur de Bourbourg got his knowledge of what Ramon had derived fro the Votan narrative, and which Brasseur has given us in several of hi books.[4] That there was a primitive empire — Votanic, if you please — seems to some minds confirmed by other evidences than the story of Votan and out of this empire — to adopt a European nomenclature — have come as such believers say, after its downfall somewhere near the Christian er and by divergence, the great stocks of people called Maya, Quiché, an Nahua, inhabiting later, and respectively, Yucatan, Guatemala, and Mexico. This is the view, if we accept the theory which Bancroft has prominently advocated, that the migrations of the Nahuas were from the sout northward,[5] and that this was the period of the divergence, eighteen centuries ago or more, of the great civilizing stocks of Mexico and of Centr America.[6] We fail to find so early a contact of these two races, if, on th other hand, we accept the old theory that the migrations which establishe he Toltec and Aztec powers were from the north southward,[1] through hree several lines, as is sometimes held, one on each side of the Rocky Mountains, with a third following the coast. In this way such advocates race the course of the Olmecs, who encountered the giants, and later of the Toltecs.

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[1] Sometimes it is said they came from the Antilles, or beyond, easterly, and that an offshoot of the same people appeared to the early French explorers as the Natchez Indians. We have, of course, offered to us a choice of theories in the belief that the Maya civilization came from the westward by the island route from Asia. This misty history is nothing without alternatives, and there are a plenty of writers who dogmatize about them.

[2] *Constituciones diocesanas del obispado de Chiappas* (Rome, 1702).

[3] *Nat. Races*, v. 160.

[4] *Hist. Nations Civilisées*, i. 37, 150, etc. *Popul Vuh*, introd., sec. v. Bancroft relates the Votan myth, with references, in *Nat. Races*, iii. 450. Brasseur identifies the Votanites with th Colhuas, as the builders of Palenqué, the foun ers of Xibalba, and thinks a branch of the wandered south to Peru. There are some st ries of even pre-Votan days, under Igh ar Imox. Cf. H. De Charency's "Myth d'Imos in the *Annales de philosophie Chrétienne*, 187 73, and references in Bancroft, v. 164, 231.

[5] *Native Races*, ii. 121, etc.

[6] Bancroft (v. 236) points to Bradford, Squie Tylor, Viollet-le-Duc, Bartlett, and Müller, wi Brasseur in a qualified way, as in the main agre ing in this early disjointing of the Nahua stoc by which the Maya was formed through sep ration from the older race.

That the Votanic peoples or some other ancient tribes were then a distinct source of civilization, and that Palenqué may even be Xibalba, or the Nachan, which Votan founded, is a belief that some archæologists find he evidence of in certain radical differences in the Maya tongues and in he Maya ruins.[2]

In the Quiché traditions, as preserved in the *Popul Vuh*, and in the *Annals of the Cakchiquels*, we likewise go back into mistiness and into the nevitable myths which give the modern comparative mythologists so much comfort and enlightenment; but Bancroft[3] and the rest get from all this nebulousness, as was gotten from the Maya traditions, that there was a great power at Xibalba,[4] — if in Central America anywhere that place may have been, — which was overcome[5] when from Tulan[6] went out migrating chiefs, who founded the Quiché-Cakchiquel peoples of Guatemala, while others, the Yaqui, — very likely only traders, — went to Mexico, and still others went to Yucatan, thus accounting for the subsequent great centres of aboriginal power — if we accept this view.

As respects the traditions of the more northern races, there is the same choice of belief and alternative demonstration. The Olmecs, the earliest Nahua comers, are sometimes spoken of as sailing from Florida and landing on the coast at what is now Pánuco, whence they travelled to Guatemala,[7] and finally settled in Tamoanchan, and offered their sacrifices farther north at Teotihuacan.[8] This is very likely the Votan legend suited to the more northern region, and if so, it serves to show, unless we discard the whole theory, how the Votanic people had scattered. The other principal source of our suppositions — for we can hardly call it knowledge — of these times is the *Codex Chimalpòpoca*, of which there is elsewhere an account,[9] and from it we can derive much the same impressions, if we are disposed t sustain a preconceived notion.

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[1] Enforced, for instance, by one of the best of the later Mexican writers, Orozco y Berra, in his *Geografía de las lenguas y Carta Ethnografica de México* (Mexicò, 1865).

[2] Tylor, *Anahuac*, 189, and his *Early Hist. Mankind*, 184. Orozco y Berra, *Geog.*, 124. Bancroft, v. 169, note. The word Maya was first heard by Columbus in his fourth voyage, 1503–4. We sometimes find it written Mayab. It is usual to class the people of Yucatan, and even the Quiché-Cakchiquels of Guatemala and those of Nicaragua, under the comprehensive term of Maya, as distinct from the Nahua people farther north.

[3] *Nat. Races*, v. 186.

[4] Brinton, with his view of myths, speaks of the attempt of the Abbé Brasseur to make Xibalba an ancient kingdom, with Palenqué as its capital, as utterly unsupported and wildly hypothetical (*Myths*, 251).

[5] Perhaps by Gucumatz (who is identified by some with Quetzalcoatl), leading the Tzequiles, who are said to have appeared from somewhere during one of Votan's absences, and to have grown into power among the Chanes, or Votan's people, till they made Tulan, where they lived, too powerful for the Votanites. Bancroft (v. 187) holds this view against Brasseur.

[6] Perhaps Ococingo, or Copan, as Bancroft conjectures (v. 187).

[7] As Sahagún calls it, meaning, as Bancroft suggests, Tabasco.

[8] Short (p. 248) points out that the linguistic researches of Orozco y Berra (*Geografía de las Lenguas de México*, 1–76) seem to confirm this.

[9] See p. 158.

The periods and succession of the races whose annals make up the history of what we now call Mexico, prior to the coming of the Spaniards, ar confused and debatable. Whether under the name of Chichimecs we are t understand a distinct people, or a varied and conglomerate mass of peopl which, in a generic way, we might call barbarians, is a question open t discussion.[1] There is no lack of names[2] to be applied to the tribes an bands which, according to all accounts, occupied the Mexican territory previous to the sixth century. Some of them were very likely Nahua forerunners[3] of the subsequent great influx of that race, like the Olmecs an Xicalancas, and may have been the people "from the direction of Florida, of whom mention has been made. Others, as some say, were eddies of thos populous waves which, coming by the north from Asia, overflowed th Rocky Mountains, and became the builders of mounds and the later people of the Mississippi Valley,[4] passed down the trend of the Rocky Mountain and built cliff-houses and pueblos, or streamed into the table-land of Mexico. This is all conjecture, perhaps delusion, but may be as good a supposition as any, if we agree to the northern theory, as Nadaillac[5] does, but no so tenable, if, with the contrary Bancroft,[6] we hold rather that they cam from the south. We can turn from one to the other of these theorists an agree with both, as they cite their evidences. On the whole, a double compliance is better than dogmatism. It is one thing to lose one's way in thi labyrinth of belief, and another to lose one's head.

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[1] Kirk says (Prescott's *Mexico*): "Confusion arises from the name of Chichimec, originally that of a single tribe, and subsequently of its many offshoots, being also used to designate successive hordes of whatever race." Some have seen in the Waiknas of the Mosquito Coast, and in the Caribs generally, descendants of these Chichimecs who have kept to their old social level. The Caribs, on other authority, came originally from the stock of the Tupis and Guaranis, who occupied the region south of the Amazon, and in Columbus's time they were scattered in Darien and Honduras, along the northern regions of South America, and in some of the Antilles (Von Martius, *Beiträge zur Ethnographie und Sprachenkunde Amerika's zumal Brasiliens*, Leipzig, 1867). Bancroft (ii. 126) gives the etymology of Chichimec and of other tribal designations. Cf. Buschmann's *Ueber die Aztekischen Ortsnamen* (Berlin, 1853). Bandelier (*Archæol. Tour*, 200; *Peabody Mus. Repts.*, ii. 393) says he fails to discover in the word anything more than a general term, signifying a savage, a hunter, or a warrior, Chichimecos, applied to roving tribes. Brasseur says that Mexican tradition applies the term Chichimecs generically to the first occupants of the New World.

[2] These names wander and exchange consonants provokingly, and it may be enough to giv alphabetically a list comprised of those in Pricl ard (*Nat. Hist. Man*) and Orozco y Berra (*Ge grafía*), with some help from Gallatin in th *American Ethno. Soc. Trans.*, i., and othe groupers of the ethnological traces: Chinantec Chatinos, Cohuixcas, Chontales, Colhuas, Cora Cuitatecs, Chichimecs, Cuextecas (Guaxteca Huastecs), Mazetecs, Mazahuas, Michinaca Miztecs, Nonohualcas, Olmecs, Otomís, Papabucos, Quinames, Soltecos, Totonacs, Triqui Tepanecs, Tarascos, Xicalancas, Zapotecs. I is not unlikely the same people may be her mentioned under different names. The diversit of opinions respecting the future of these vapor existences is seen in Bancroft's collation (v 202). Torquemada tells us about all that w know of the Totonacs, who claim to have bee the builders of Teotihuacan. Bancroft gives references (v. 204) for the Totonacs, (p. 206) fo the Otomís, (p. 207) for the Mistecs and Zapotecs, and (p. 208) for the Huastecs.

[3] Bancroft, ii. 97. Brasseur, *Nat. Civ.*, i. ch 4, and his *Palenqué*, ch. 3.

[4] Called Huehue-Tlapallan, as Brasseur woul have it.

[5] Following Motolinía and other early writers

[6] *Native Races*, v. 219, 616.

It was the Olmecs who found the Quinames, or giants, near Puebla and Cholula, and in the end overcame them. The Olmecs built, according to one story, the great pyramid of Cholula,[1] and it was they who received the great Quetzalcoatl from across the sea, a white-bearded man, as the legends went, who was benign enough, in the stories told of him, to make the later Spaniards think, when they heard them, that he was no other than the Christian St. Thomas on his missions. When the Spaniards finally induced the inheritors of the Olmecs' power to worship Quetzalcoatl as a beneficent god, his temple soon topped the mound at Cholula.[2] We have seen that the great Nahua occupation of the Mexican plateau, at a period somewhere from the fourth to the seventh century,[3] was preceded by some scattered tribal organizations of the same stock, which had at an early date mingled with the primitive peoples of this region. We have seen that there is a diversity of opinion as to the country from which they came, whether from the north or south. A consideration of this question involves the whole question of the migration of races in these pre-Columbian days, since it is the coming and going of peoples that form the basis of all its history.

In the study of these migrations, we find no more unanimity of interpretation than in other questions of these early times.[4] The Nahua peoples (Toltecs, Aztecs, Mexicans, or what you will), according to the prevalent views of the early Spanish writers, came by successive influxes from the north or northwest, and from a remote place called Tollan, Tula, Tlapallan, Huehue-Tlapallan, as respects the Toltec group,[5] and called Aztlan as respects the Aztec or Mexican. When, by settlement after settlement, each migratory people pushed farther south, they finally reached Central Mexico. This sequence of immigration seems to be agreed upon, but as to where their cradle was and as to what direction their line of progress took, there is a diversity of opinion as widely separated as the north is from the south. The northern position and the southern direction is all but universally accepted among the early Spanish writers[1] and their followers,[2] while it is claimed by others that the traditions as preserved point to the south as the starting-point. Cabrera took this view. Brasseur sought to reconcile conflicting tradition and Spanish statement by carrying the line of migration from the south with a northerly sweep, so that in the end Anahuac would be entered from the north, with which theory Bancroft[3] is inclined to agree. Aztlan, as well as Huehue-Tlapallan, by those who support the northern theory, has been placed anywhere from the California peninsula[4] within a radius that sweeps through Wisconsin and strikes the Atlantic at Florida.[5]

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[1] Bandelier, *Archæol. Tour*, 253.

[2] Kingsborough, ix. 206, 460; Veytia, i. 155, 163. Of the Quetzalcoatl myth there are references elsewhere. P. J. J. Valentini has made a study of the early Mexican ethnology and history in his "Olmecas and Tultecas," translated by S. Salisbury, Jr., and printed in the *Amer. Antiq. Soc. Proc.*, Oct. 21, 1882. On Quetzalcoatl in Cholula, see Torquemada, translated in Bancroft, iii. 258.

[3] This wide difference covers intervening centuries, each of which has its advocates. Short carries their coming back to the fourth century (p. 245), but Clavigero's date of A. D. 544 is more commonly followed. Veytia makes it the seventh century. Bancroft (v. 211, 214) notes the diversity of views.

[4] Bancroft (v. 322) in a long note collates the different statements of the routes and sojourns in this migration. Cf. Short, p. 259.

[5] Cf. Kirk in Prescott, i. 10. It must be confessed that it is rather in the domain of myth than of history that we must place all that has been written about the scattering of the Toltec people at Babel (Bancroft, v. 19), and their finally reaching Huehue-Tlapallan, wherever that may have been. The view long prevalent about this American starting-point of the Nahuas, Toltecs, or whatever designation may be given to the beginners of this myth and history, placed it in California, but some later writers think it worth while to give it a geographical existence in the Mississippi Valley, and to associate it in some vague way with the mound-builders and their works (Short, *No. Amer. of Antiq.*, 251, 253). There is some confusion between Huehue-Tlapallan of this story and the Tlapallan noticed in the Spanish conquest time, which was somewhere in the Usumacinta region, and if we accept Tollan, Tullan, or Tula as a form of the name, the confusion is much increased (Short, pp. 217–220). Bancroft (v. 214) says there is no sufficient data to determine the position of Huehue-Tlapallan, but he thinks "the evidence, while not conclusive, favors the south rather than the north" (p. 216). The truth is, about these conflicting views of a northern or southern origin, pretty much as Kirk puts it (Prescott, i. 18): "All that can be said with confidence is, that neither of the opposing theories rests on a secure and sufficient basis." The situation of Huehue-Tlapallan and Aztlan is very likely one and the same question, as looking to what was the starting-point of all the Nahua migrations, extending over a thousand years.

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[1] Bancroft, v. 217.

[2] Torquemada, Boturini, Humboldt, Brasseur, Charnay, Short, etc.

[3] *Nat. Races* (v. 222).

[4] In support of the California location, Buschmann, in his *Ueber die Spuren der Aztekischen Sprache im nördlichen Mexico und höheren Amerikanischen Norden* (Berlin, 1854), finds traces of the Mexican tongue in those of the recent California Indians. Linguistic resemblances to the Aztec, even so far north as Nootka, have been traced, but later philologists deny the inferences of relationship drawn from such similarity (Bancroft, iii. p. 612). The linguistic confusion in aboriginal California is so great that there is a wide field for tracing likenesses (*Ibid.* iii. 635). In the *California State Mining Bureau, Bulletin no. 1* (Sacramento, 1888), Winslow Anderson gives a description of some desiccated human remains found in a sealed cave, which are supposed to be Aztec. There are slight resemblances to the Aztec in the Shoshone group of languages (Bancroft, iii. 660), and the same author arranges all that has been said to connect the Mexican tongue with those of New Mexico and neighboring regions (iii. 664). Buschmann, who has given particular attention to tracing the Aztec connections at the north, finds nothing to warrant anything more than casual admixtures with other stocks (*Die Lautveränderung Aztekischer Wörter*, Berlin, 1855, and *Die Spuren der Aztekischen Sprachen*, Berlin, 1859). See Short (p. 487) for a summary.

[5] Bancroft (v. 305) cites the diverse views; so does Short to some extent (pp. 246, 258, etc.). Cf. Brinton's *Address* on "Where was Aztlan?" p. 6; Short, 486, 490; Nadaillac, 284; Wilson's *Prehistoric Man*, i. 327.

Brinton (*Myths of the New World*, etc., 89; *Amer. Hero. Myths*, 92) holds that Aztlan is a name wholly of mythical purport, which it would be vain to seek on the terrestrial globe. This cradle region of the Nahuas sometimes appears as the Seven Caves (Chicomoztoc), and Duran places them "in Teoculuacan, otherwise called Aztlan, a country toward the north and connected with Florida." The Seven Caves were explained by Sahagún as a valley, by Clavigero as a city, by Schoolcraft and others as simply seven boats in which the first comers came from Asia; Brasseur makes them and Aztlan the same; others find them to be the seven cities of Cibola,—so enumerates Brinton (*Myths*, 227) who thinks that the seven divisions of the Nahuas sprung from the belief in the Seven Caves and had in reality no existence.

Gallatin has followed out the series of migrations in the *Amer. Ethnol. Soc. Trans.*, i. 162 Dawson, *Fossil Men* (ch. 3), gives his comprehensive views of the main directions of these early migrations. Brasseur follows the Nahuas (*Popul Vuh*, introd., sect. ix.). Winchell (*Pre-Adamites*) thinks the general tendency was from north to south. Morgan finds the origin of the Mexican tribes in New Mexico and in the San Juan Valley (*Peabody Mus. Rept.*, xii. 553. Cf his article in the *North Am. Rev.*, Oct., 1869) Humboldt (*Views of Nature*, 207) touches the Aztec wanderings.

There are two well-known Aztec migration maps, first published in F. G. Carreri's *Gir del Mondo;* in English as "Voyage round the world," in Churchill's *Voyages*, vol. iv., concerning which see Bancroft, ii. 543; iii. 68, 69; Short 262, 431, 433; Prescott, iii. 364, 382. Orozco y Berra (*Hist. Antiq. de Mexico*, iii. 61) says that

The advocates of the southern starting-point of these migrations have been comparatively few and of recent prominence; chief among them are Squier and Bancroft.[1]

With the appearance of a people, which, for want of a better designation, are usually termed Toltecs, on the Mexican table-land in the sixth century or thereabouts,[2] we begin the early history of Mexico, so far as we can make any deductions from the semi-mythical records and traditions which the Spaniards or the later aborigines have preserved for us. This story of the Nahua occupation of Anáhuac is one of strife and shifting vassalage, with rivalries and uprisings of neighboring and kindred tribes, going on for centuries. While the more advanced portion of the Nahuas in Anáhuac were making progress in the arts, that division of the same stock which was living beyond such influence, and without the bounds of Anáhuac, were looked upon rather as barbarians than as brothers, and acquired the name which had become a general one for such rougher natures, Chichimec. It is this Chichimec people under some name or other who are always starting up and overturning something. At one time they unite with the Colhuas and found Colhuacan, and nearly subjugate the lake region. Then the Toltec tarriers at Huehue-Tlapallan come boldly to the neighborhood of the Chichimecs and found Tollan; and thus they turn a wandering community into what, for want of a better name, is called a monarchy. They strengthened its government by an alliance with the Chichimecs,[3] and placed their seat of power at Colhuacan.

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these maps follow one another, and are not different records of the same progress. Humboldt (*Vues*, etc., ii. 176) gives an interpretation of them in accordance with Sigüenza's views, which is the one usually followed, and Bancroft (v. 324) epitomizes it. Ramirez says that the copies reproduced in Humboldt, Clavigero, and Kingsborough are not so correct as the engraving given in Garcia y Cubas's *Atlas geográfico, estadistico é histórico de la Republica Mejicana* (April, 1858). Bancroft (ii. 544) gives it as reproduced by Ramirez. It is also in the Mexican edition of Prescott, and in Schoolcraft's *Indian Tribes*. Cf. Delafield's *Inquiry* (N. Y., 1839) and Léon de Rosny's *Les doc. écrits de l'antiq. Amér.* (Paris, 1882). The original is preserved in the Museo Nacional of Mexico. A palm-tree on the map, near Aztlan, has pointed some of the arguments in favor of a southern position for that place, but Ramirez says it is but a part of a hieroglyphic name, and has no reference to the climate of Aztlan (Short, p. 266). F. Von Hellwald printed a paper on "American migrations," with notes by Professor Henry, in the *Smithsonian Report*, 1866, pp. 328–345. Short defines as "altogether the most enlightened treatment of the subject" the paper of John H. Becker, "Migrations des Nahuas," in the *Compte rendu, Congrès des Américanistes* (Luxembourg, 1877), i. 325. This paper finds an identification of the Tulan Zuiva of the Quichés, the Huehue-Tlapallan of the Toltecs, the Amaquemecan of the Chichimecs, and the Oztotlan (Aztlan) of the Aztecs in the valleys of the Rio Grande del Norte and Rio Colorado, as was Morgan's view. Short (p. 249) summarizes his paper. Bancroft (v. 289) shows the diversity of views respecting Amaquemecan.

[1] *Native Races*, v. 167, recapitulates the proofs against the northern theory. J. R. Bartlett, *Personal Narrative*, ii. 283, finds no evidence for it. The successive sites of their sojourns as they passed on their journeys are given as Tlapallan, Tlacutzin, Tlapallanco, Jalisco, Atenco, Iztachnexuca, Tollatzinco, Tollan or Tula, — the last, says Bancroft, apparently in Chiapas. If there was not such confusion respecting the old geography, these names might decide the question.

[2] Writers usually place the beginnings of credible history at about this period. Brasseur and the class of writers who are easily lifted on their imagination talk about traces of a settled government being discernible at periods which they place a thousand years before Christ.

[3] References in Bancroft, v. 247, with Brasseur for the main dependence, in his use of the *Codex Chimalpópoca* and the *Memorial de Colhuacan*.

Then we read of a power springing up at Tezcuco, and of various other events, which happened or did not happen, according as you believe this or the other chronicle. The run of many of the stories of course produces the inevitable and beautiful daughter, and the bold princess, who control many an event. Then there is a league of Colhuacan, Otompan, and Tollan. Suddenly appears the great king Quetzalcoatl, — though it may be we confound him with the divinity of that name; and with him, to perplex matters, comes his sworn enemy Huemac. Quetzalcoatl's devoted labors to make his people give up human sacrifice arrayed the priesthood against him, until at last he fell before the intrigues that made Huemac succeed in Tollan, and that drove his luckless rival to Cholula, where he reigned anew. Huemac followed him and drove him farther; but in doing so he gave his enemies in Tollan a chance to put another on the throne.

Then came a season of peace and development, when Tollan grew splendid. Colhuacan flourished in political power, and Teotihuacan[1] and Cholula were the religious shrines of the people. But at last the end was near.

The closing century of the Toltec power was a frightful one for broil, pestilence, and famine among the people, amours and revenge in the great chieftain's household, revolt among the vassals; with sorcery rampant and the gods angry; with volcanoes belching, summers like a furnace, and winters like the pole; with the dreaded omen of a rabbit, horned like a deer, confronting the ruler, while rebel forces threatened the capital. There was also civil strife within the gates, phallic worship and debauchery, — all preceding an inundation of Chichimecan hordes. Thus the power that had flourished for several hundred years fell, — seemingly in the latter half of the eleventh century.[2] The remnant that was left of the desolated people went hither and thither, till the fragments were absorbed in the conquerors, or migrated to distant regions south.[3]

Whether the term Toltec signified a nation, or only denoted a dynasty, is a question for the archæologists to determine. The general opinion heretofore has been that they were a distinct race, of the Nahua stock, however, and that they came from the north. The story which has been thus far told of their history is the narrative of Ixtlilxochitl, and is repeated by Veytia, Clavigero, Prescott, Brasseur de Bourbourg, Orozco y Berra,

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[1] Charnay (Eng. trans., ch. 8 and 9) calls it a rival city of Tula or Tollan, rebuilt by the Chichimecs on the ruins of a Toltec city.

[2] If one wants the details of all this, he can read it in Veytia, Brasseur (*Nat. Civilisées* and *Palenqué*, ch. viii.), and Bancroft, the latter giving references (v. 285).

[3] It is frequently stated that there was a segregated migration to Central America. Bancroft (v. 168, 285), who collates the authorities, finds nothing of the kind implied. He thinks the mass remained in Anáhuac. The old view as expressed by Prescott (i. 14) was that "much the greater number probably spread over the region of Central America and the neighboring isles, and the traveller now speculates on the majestic ruins of Mitla and Palenqué as possibly the work of this extraordinary people." Kirk, as Prescott's editor, refers to the labors of Orozco y Berra (*Geografía de las Lenguas de México*, 122), followed by Tylor, *Anahuac*, 189) as establishing the more recent view that this southern architecture, "though of a far higher grade, was long anterior to the Toltec dominion."

Nadaillac, and the later compilers. Sahagún seems to have been the first to make a distinct use of the name Toltec, and Charency in his paper on *Xibalba* finds evidence that the Toltecs constituted two different migrations, the one of a race that was straight-headed, which came from the northwest, and the other of a flat-headed people, which came from Florida.

Brinton, on the contrary, finds no warrant either for this dual migration, or indeed for considering the Toltecs to be other than a section of the same race, that we know later as Aztecs or Mexicans. This sweeping denial of their ethnical independence had been forestalled by Gallatin;[1] but no one before Brinton had made it a distinct issue, though some writers before and since have verged on his views.[2] Others, like Charnay, have answered Brinton's arguments, and defended the older views.[3] Bandelier's views connect them with the Maya rather than with the Nahua stock,[4] if, as he thinks may be the case, they were the people who landed at Pánuco and settled at Tamoanchan, the Votanites, as they are sometimes called. He traces back to Herrera and Torquemada the identification for the first time of the Toltecs with these people.[5] Bandelier's conclusions, however, are that "all we can gather about them with safety is, that they were a sedentary Indian stock, which at some remote period settled in Central Mexico," and that "nothing certain is known of their language." [6]

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[1] *Amer. Ethno. Soc. Trans.*, i.

[2] Bancroft (v. 287) says: "It is probable that the name Toltec, a title of distinction rather than a national name, was never applied at all to the common people."

[3] Brinton's main statement is in his *Were the Toltecs an historic nationality? Read before the American Philosophical Society, Sept. 2, 1887* (Phila., 1887); published also in their *Proceedings*, 1887, p. 229. Cf. also Brinton's *Amer. Hero. Myths* (Phil., 1882), p. 86, where he throws discredit on the existence of the alleged Toltec king Quetzalcoatl (whom Sahagún keeps distinct from the mythical demi-god); and earlier, in his *Myths of the New World* (p. 29), he had suggested that the name Toltec might have "a merely mythical signification." Charnay, who makes the Toltecs a Nahuan tribe, had defended their historical status in a paper on "La Civilisation Tolteque," in the *Revue d'Ethnographie* (iv., 1885); and again, two years later, in the same periodical, he reviewed adversely Brinton's arguments. (Cf. *Saturday Review*, lxiii. 843.) Otto Stoll, in his *Guatemala, Reisen und Schilderungen* (Leipzig, 1886), is another who rejects the old theory.

[4] *Archæol. Tour*, 253.

[5] *Archæol. Tour*, 7. Sahagún identifies the Toltecs with the "giants," and if these were the degraded descendants of the followers of Votan, Sahagún thus earlier established the same identity.

[6] *Archæol. Tour*, 191. The fact that the names which we associate with the Toltecs are Nahua, only means that Nahua writers have transmitted them, as Bandelier thinks. Cf. also Bandelier's citation in the *Peabody Mus. Reports*, vol. ii. 388, where he speaks of our information regarding the Toltecs as "limited and obscure." He thinks it beyond question that they were Nahuas; and the fact that their division of time corresponds with the system found in Yucatan, Guatemala, etc., with other evidences of myths and legends, leads him to believe that the aborigines of more southern regions were, if not descendants, at least of the same stock with the Toltecs, and that we are justified in studying them to learn what the Toltecs were. He finds that Veytia, in his account of the Toltecs, beside depending on Sahagún and Torquemada, finds a chief source in Ixtlilxochitl, and locates Huehue-Tlapallan in the north; and Veytia's statements reappear in Clavigero.

The best narratives of the Toltec history are those in Veytia, *Historia Antigua de Méjico* (Mexico, 1806); Brasseur's *Hist. Nations Civilisées* (vol. i.), and his introduction to his *Popul Vuh;* and Bancroft (v. ch. 3 and 4): but we must look to Ixtlilxochitl, Torquemada, Sahagún, and the others, if we wish to study the sources. In such a study we shall encounter vexatious problems enough. It is practically impossible to arrange chronologically what Ixtlilxochitl says that he got from the picture-writings which he interpreted. Bancroft (v. 209) does the best he can to give it a forced perspicuity. Wilson (*Prehis-*

The desolation of Anáhuac as the Toltecs fell invited a foreign occupation, and a remote people called Chichimecs[1] — not to be confounded with the primitive barbarians which are often so called — poured down upon the country. Just how long after the Toltec downfall this happened, is in dispute;[2] but within a few years evidently, perhaps within not many months, came the rush of millions, if we may believe the big stories of the migration. They surged by the ruined capital of the Toltecs, came to the lake, founded Xoloc and Tenayocan, and encountered, as they spread over the country, what were left of the Toltecs, who secured peace by becoming vassals. Not quite so humble were the Colhuas of Colhuacan, — not to be confounded with the Acolhuas, — who were the most powerful section of the Toltecs yet left, and the Chichimecs set about crushing them, and succeeded in making them also vassals.[3] The Chichimec monarchs, if that term does not misrepresent them, soon formed alliances with the Tepanecs, the Otomis, and the Acolhuas, who had been prominent in the overthrow of the Toltecs, and all the invaders profited by the higher organizations and arts which these tribes had preserved and now imparted. The Chichimecs also sought to increase the stability of their power by marriages with the noble Toltecs still remaining. But all was not peace. There were rebellions from time to time to be put down; and a new people, whose future they did not then apprehend, had come in among them and settled at Chapultepec. These were the Aztecs, or Mexicans, a part of the great Nahua immigration, but as a tribe they had dallied behind the others on the way, but were now come, and the last to come.[4]

Tezcuco soon grew into prominence as a vassal power,[5] and upon the capital city many embellishments were bestowed, so that the great lord of the Chichimecs preferred it to his own Tenayocan, which gave opportunity for rebellious plots to be formed in his proper capital; and here at Tezcuco the next succeeding ruler preferred to reign, and here he became isolated by the uprising of rebellious nobles. The ensuing war was not simply of side against side, but counter-revolutions led to a confusion of tumults, and petty chieftains set themselves up against others here and there. The result was that Quinantzin, who had lost the general headship of the country, recovered it, and finally consolidated his power to a degree surpassing all his predecessors.

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toric Man, i. 245) not inaptly says: "The history of the Toltecs and their ruined edifices stands on the border line of romance and fable, like that of the ruined builders of Carnac and Avebury."

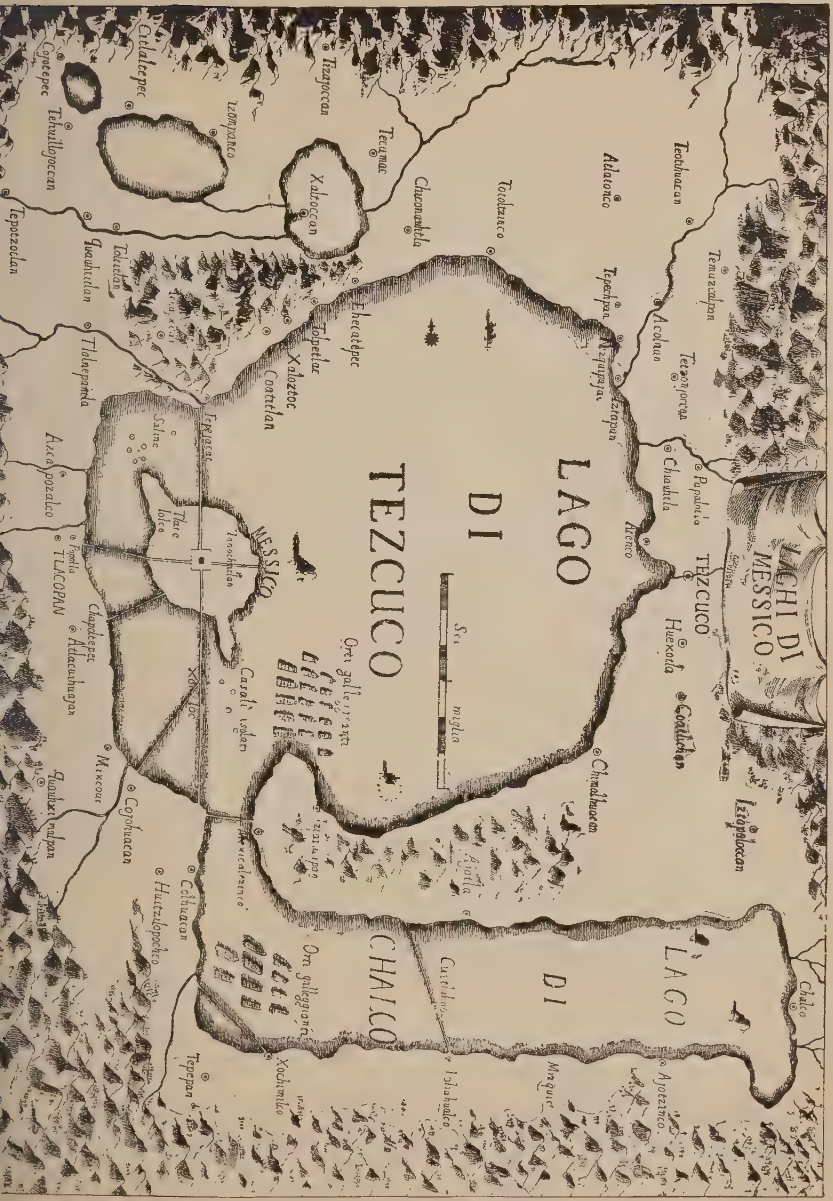
[1] Short (page 255) points out that Bancroft unadvisedly looks upon these Chichimecs as of Nahua stock, according to the common belief. Short thinks that Pimentel (*Lenguas indigenas de México*, published in 1862) has conclusively shown that the Chichimecs did not originally speak the Nahua tongue, but subsequently adopted it. Short (page 256) thinks, after collating the evidence, that it is impossible to determine whence or how they came to Anáhuac.

[2] Bancroft, v. 292, gives the different views. Cf. Kirk in Prescott, i. 16.

[3] These events are usually one thing or another, according to the original source which you accept, as Bancroft shows (v. 303). The story of the text is as good as any, and is in the main borne out by the other narratives.

[4] Bancroft, v. 308. Cf., on the arrival of the Mexicans in the valley, Bandelier (*Peabody Mus. Reports*, ii. 398) and his references.

[5] Prescott, i., introduction ch. 6, tells the story of their golden age.



CLAVIGERO'S MEXICO.* (Ed. of 1780, vol. iii.)

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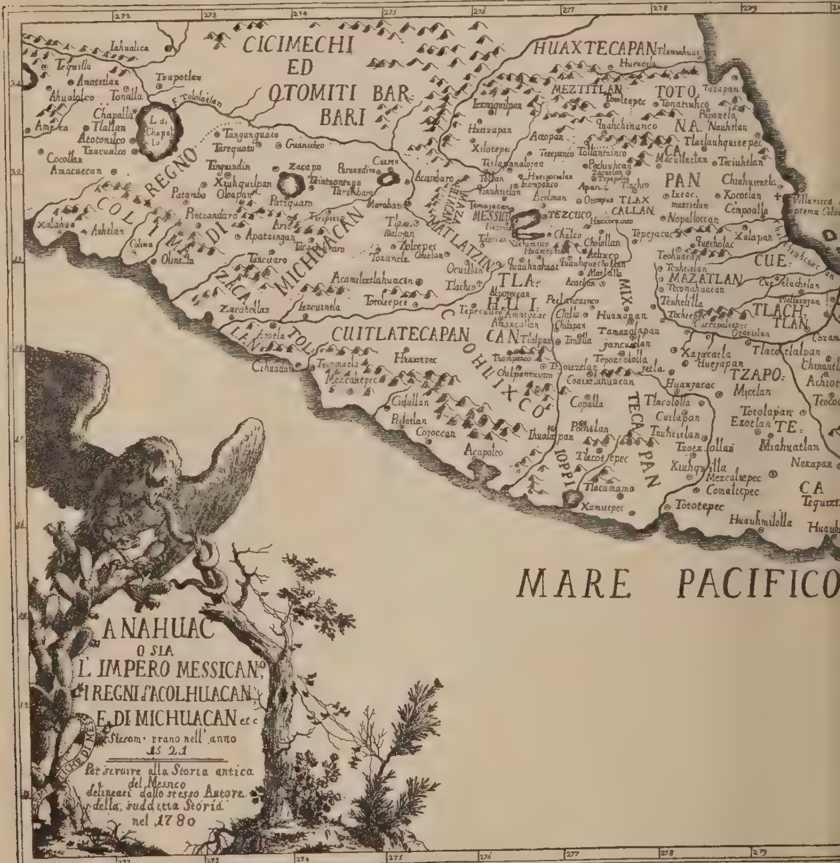
* Cf. the map in Lucien Biart's *Les Aztèques* (Paris, 1885). Prescott says the maps in Clavigero, Lopez, nd Robertson defy "equally topography and history." Cf. note on plans of the city and valley in Vol. II. p. 364, 369, 374, to which may be added, as showing diversified views, those in Stevens's *Herrera* (London, 740), vol. ii.; Bordone's *Libro* (1528); Icazbalceta's *Coll. de docs.*, i. 390; and the Eng. translation of Cortes' espatches, 333.

Meanwhile the Aztecs at Chapultepec, growing arrogant, provoked their neighbors, and were repressed by those who were more powerful. But they abided their time. They were good fighters, and the Colhua ruler courted them to assist him in his maraudings, and thus they were becoming accustomed to warfare and to conquest, and were giving favors to be repaid. Thi intercourse, whether of association or rivalry, of the Colhuas and Mexican (Aztecs), was continued through succeeding periods, with a confusion o dates and events which it is hard to make clear. There was mutual distrus and confidence alternately, and it all ended in the Aztecs settling on a island in the lake, where later they founded Tenochtitlan, or Mexico.[1] Her



CLAVIGERO'S MAP.* (Ed. of 1580, vol. i.)

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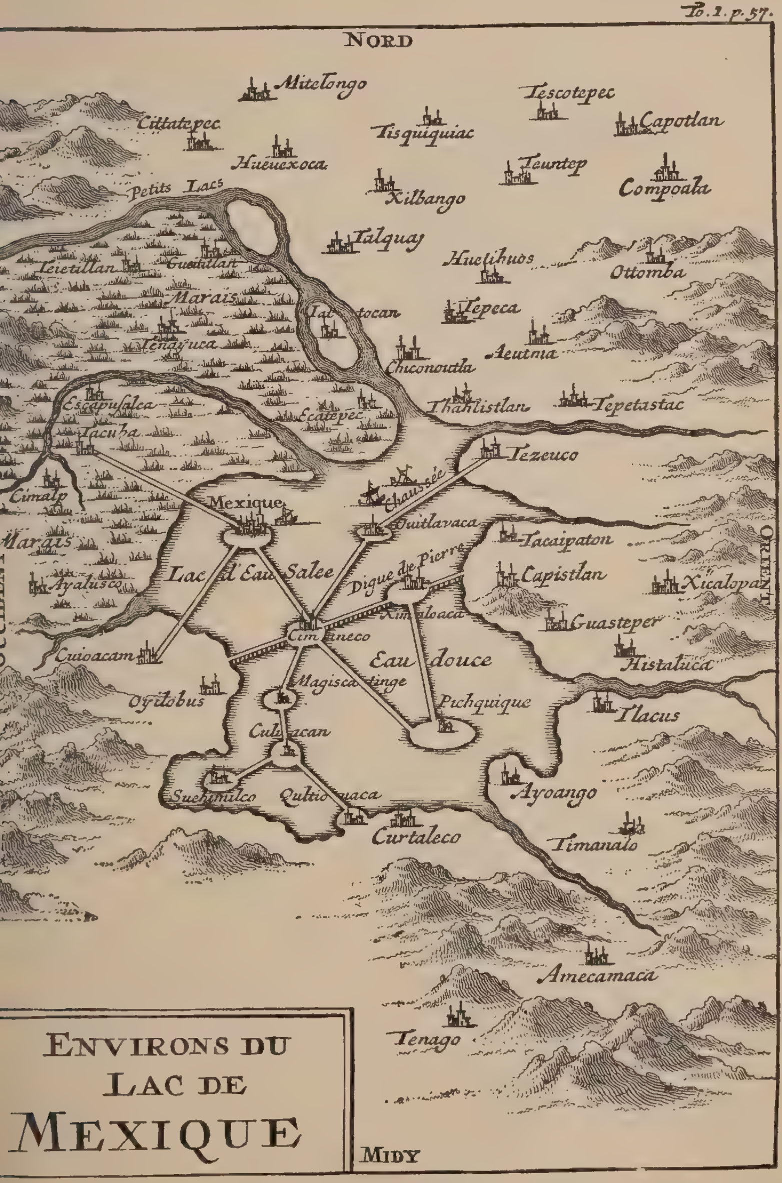
[1] This is placed A. D. 1325. Cf. references in Bancroft (v. 346).

* Clavigero speaks of his map "per servire all storia antica del Messico." A map of the Aztec dominio just before the Conquest is given in Ranking (London, 1827). See note in Vol. II. p. 358.

y developed those bloody rites of sacrifice which had already disgusted ir allies and neighbors.



THE LAKE OF MEXICO.*

A map which did service in different forms in various books about Mexico and its aboriginal localities in early part of the eighteenth century. It is here taken from the *Voyages de Francois Coreal* (Amsterdam,).

Meanwhile the powers at Colhuacan and Azcapuzalco flourished an repressed uprisings, and out of all the strife Tezozomoc came into prominence with his Tepanecs, and amid it all the Aztecs, siding here and there gained territory. With all this occurring in different parts of his dominions, the Chichimec potentate grew stronger and stronger, and while by hi countenance the old Toltec influences more and more predominated. An so it was a flourishing government, with little to mar its prospects but th ambition of Tezozomoc, the Tepanec chieftain, and the rising power of th Aztecs, who had now become divided into Mexicans and Tlatelulcas. Th famous ruler of the Chichimecs, Techotl, died in A. D. 1357, and the youn Ixtlilxochitl took his power with all its emblems. The people of Tenochtitlan, or their rulers, were adepts in practising those arts of diplomacy b which an ambitious nation places itself beside its superiors to secure a sor of reflected consequence. Thus they pursued matrimonial alliances an other acts of prudence. Both Tenochtitlan and its neighbor Tlatelulco gre apace, while skilled artisans and commercial industries helped to raise the in importance.

The young Ixtlilxochitl at Tezcuco was not so fortunate, and it soo looked as if the Tepanec prince, Tezozomoc, was only waiting an opport nity to rebel. It was also pretty clear that he would have the aid of Mexic and Tlatelulco, and that he would succeed in securing the sympathy of man wavering vassals or allies. The plans of the Tepanec chieftain at las ripened, and he invaded the Tezcucan territory in 1415. In the war whic followed, Ixtlilxochitl reversed the tide and invaded the Tepanec territory besieging and capturing its capital, Azcapuzalco.[1] The conqueror lost b his clemency what he had gained by arms, and it was not long before h was in turn shut up in his own capital. He did not succeed in defending i and was at last killed. So Tezozomoc reached his vantage of ambition, an was now in his old age the lord paramount of the country. He tried t harmonize the varied elements of his people ; but the Mexicans had no fared in the general successes as they had hoped for, and were only openl content. The death of Tezozomoc prepared the way for one of his sons Maxtla, to seize the command, and the vassal lords soon found that th spirit which had murdered a brother had aims that threatened wider des lation. The Mexicans were the particular object of Maxtla's oppressiv spirit, and by the choice of Itzcoatl for their ruler, who had been for man years the Mexican war-chief, that people defied the lord of all, and in thi they were joined by the Tlatelulcas under Quauhtlatohuatzin, and by lesse allies. Under this combination of his enemies Maxtla's capital fell, th usurper was sacrificed, and the honors of the victory were shared by Itzcoatl, Nezahualcoyotl (the Acolhuan prince whose imperial rights Maxtl had usurped), and Montezuma, the first of the name, — all who had in thei several capacities led the army of three or four hundred thousand allies

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[1] On the conquest of the Tecpanecas by the Mexicans, see the references in Bandelier (*Pea body Mus. Reports*, ii. 412).

we may believe the figures, to their successes, which occurred apparently
mewhere between 1425 and 1430. The political result was a tripartite
nfederacy in Anáhuac, consisting of Acolhua, Mexico, and Tlacopan. In
e division of spoils, the latter was to have one fifth, and the others two
ths each, the Acolhuan prince presiding in their councils as senior.[1]

The next hundred years is a record of the increasing power of this con-
deracy, with a constant tendency to give Mexico a larger influence.[2] The
o capitals, Tenochtitlan and Tezcuco, looking at each other across the
ke, were uninterruptedly growing in splendor, or in what the historians call
that word,[3] with all the adjuncts of public works, — causeways, canals,
ueducts, temples, palaces and gardens, and other evidences of wealth,
ich perhaps these modern terms only approximately represent. Tezcuco
s taken possession of by Nezahualcoyotl as his ancient inheritance, and
s confederate Itzcoatl placed the crown on his head. Together they made
r north and south. Xochimilco, on the lake next south of Mexico,
elded; and the people of Chalco, which was on the most southern of the
ring of lakes, revolted and were suppressed more than once, as opportuni-
es offered. The confederates crossed the ridge that formed the southern
und of the Mexican valley and sacked Quauhnahuac. The Mexican ruler
d in all this gained a certain ascendency in the valley coalition, when he
ed in 1440, and his nephew, Montezuma the soldier, and first of the name,[4]
cceeded him. This prince soon had on his hands another war with Chalco,
d with the aid of his confederates he finally humbled its presumptuous
ople. So, with or without pretence, the wars and conquests went on, if
r no other reasons, to obtain prisoners for sacrifice.[5] They were diversi-
d at times, particularly in 1449, by contests with the powers of nature,
en the rising waters of the lake threatened to drown their cities, and
en, one evil being cured, others in the shape of famine and plague suc-
eded.

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[1] For details of the period of the Chichimec
cendency, see Bancroft (v. ch. 5–7), Brasseur
at. Civil. ii.), and the authorities plentifully
ed in Bancroft.

[2] On the nature of the Mexican confederacy
Bandelier (*Peabody Mus. Reports*, ii. 416).
enumerates the authorities upon the point
t no one of the allied tribes exercised any
wers over the others beyond the exclusive
litary direction of the Mexicans proper (*Pea-*
y Mus. Reports, ii. 559). Orozco y Berra
eografía, etc.) claims that there was a tendency
assimilate the conquered people to the Mexi-
n conditions. Bandelier claims that "no at-
npt, either direct or implied, was made to
similate or incorporate them." He urges that
where on the march to Mexico did Cortés fall
with Mexican rulers of subjected tribes. It
es not seem to be clear in all cases whether it
s before or after the confederation was formed,
whether it was by the Mexicans or Tezcucans that Tecpaneca, Xochimilca, Cuitlahuac, Chalco, Acolhuacan, and Quauhnahuac, were conquered. Cf. Bandelier in *Peabody Mus. Reports*, ii. 691. As to the tributaries, see *Ibid.* 695.

[3] Cf. Brasseur's *Nations Civ.* ii. 457, on Tezcuco in its palmy days.

[4] Sometimes written Mochtheuzema, Moktezema. The Aztec Montezuma must not, as is contended, be confounded with the hero-god of the New Mexicans. Cf. Bancroft, iii. 77, 171; Brinton's *Myths*, 190; Schoolcraft's *Ind. Tribes*, iv. 73; Tylor's *Prim. Culture*, ii. 384; Short, 333.

[5] This has induced some historians to call these wars "holy wars." Bandelier discredits wholly the common view, that wars were undertaken to secure victims for the sacrificial stone (*Archæol. Tour*, 24). But in another place (*Peabody Mus. Reports*, ii. 128) he says: "War was required for the purpose of obtaining human victims, their religion demanding human sacrifices at least eighteen times every year."

Sometimes in the wars the confederates over-calculated their own prowess as when Atonaltzin of Tilantongo sent them reeling back, only, however, t make better preparations and to succeed at last. In another war to th southeast they captured, as the accounts say, over six thousand victims fo the stone of sacrifice.

The first Montezuma died in 1469, and the choice for succession fell o his grandson, the commander of the Mexican army, Axayacatl, who at onc followed the usual custom of raiding the country to the south to get th thousands of prisoners whose sacrifice should grace his coronation. Neza hualcoyotl, the other principal allied chieftain, survived his associate bu two years, dying in 1472, leaving among his hundred children but one legit imate son, Nezahualpilli, a minor, who succeeded. This gave the new Mex ican ruler the opportunity to increase his power. He made Tlatelulc tributary, and a Mexican governor took the place there of an independen sovereign. He annexed the Matlaltzinca provinces on the west. So Axa yacatl, dying in 1481, bequeathed an enlarged kingdom to his brother an successor, Tizoc, who has not left so warlike a record. According to som authorities, however, he is to be credited with the completion of the grea Mexican temple of Huitzilopochtli. This did not save him from assassina tion, and his brother Ahuitzotl in 1486 succeeded, and to him fell the lo of dedicating that great temple. He conducted fresh wars vigorousl enough to be able within a year, if we may believe the native records, t secure sixty or seventy thousand captives for the sacrificial stone, so essen tial a part of all such dedicatory exercises. It would be tedious to enume ate all the succeeding conquests, though varied by some defeats, like tha which they experienced in the Tehuantepec region. Some differences grew up, too, between the Mexican chieftain and Nezahualpilli, notwithstandin or because of the virtues of the latter, among which doubtless, according t the prevailing standard, we must count his taking at once three Mexica princesses for wives, and his keeping a harem of over two thousand women if we may believe his descendant, the historian Ixtlilxochitl. His justic as an arbitrary monarch is mentioned as exemplary, and his putting to deat a guilty son is recounted as proof of it.

Ahuitzotl had not as many virtues, or perhaps he had not a descendant t record them so effectively; but when he died in 1503, what there was he roic in his nature was commemorated in his likeness sculptured with other of his line on the cliff of Chapultepec.[1] To him succeeded that Monte zuma, son of Axayacatl, with whom later this ancient history vanishes When he came to power, the Aztec name was never significant of mor lordly power, though the confederates had already had some reminders tha conquest near home was easier than conquest far away. The policy of th ast Aztec ruler was far from popular, and while he propitiated the higher anks, he estranged the people. The hopes of the disaffected within and ithout Anáhuac were now centred in the Tlascalans, whose territory lay asterly towards the Gulf of Mexico, and who had thus far not felt the bur- en of Aztec oppression. Notwithstanding that their natural allies, the Cho- ulans, turned against the Tlascalans, the Aztec armies never succeeded in umbling them, as they did the Mistecs and the occupants of the region owards the Pacific. Eclipses, earthquakes, and famine soon succeeded one nother, and the forebodings grew numerous. Hardly anything happened ut the omens of disaster[1] were seen in it, and superstition began to do its ork of enervation, while a breach between Montezuma and the Tezcucan hief was a bad augury. In this condition of things the Mexican king tried o buoy his hopes by further conquests; but widespread as these invasions ere, Michoacan to the west, and Tlascala to the east, always kept their ndependence. The Zapotecs in Oajaca had at one time succumbed, but his was before the days of the last Montezuma.

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[1] As to these carvings, which have not yet wholly disappeared, see *Peabody Mus. Reports*, ii. 677, 678. There is a series of alleged portraits of the Mexican kings in Carbajal-Espinosa's *Hist. de Mexico* (Mexico, 1862). See picture of Montezuma II. in Vol. II. 361, 363, and tha in Ranking, p. 313.

His rival across the lake at Tezcuco was more oppressed with the tales of he soothsayers than Montezuma was, and seems to have become inert be- ore what he thought an impending doom some time before he died, or, as is people believed, before he had been translated to the ancient Amaque- necan, the cradle of his race. This was in 1515. His son Cacama was hosen to succeed; but a younger brother, Ixtlilxochitl, believed that the hoice was instigated by Montezuma for ulterior gain, and so began a revolt n the outlying provinces, in which he received the aid of Tlascala. The ppearance of the Spaniards on the coasts of Yucatan and Tabasco, of which xaggerated reports reached the Mexican capital, paralyzed Montezuma, so hat the northern revolt succeeded, and Cacama and Ixtlilxochitl came to an nderstanding, which left the Mexicans without much exterior support. Iontezuma was in this crippled condition when his lookouts on the coast ent him word that the dreaded Spaniards had appeared, and he could rec- gnize their wonderful power in the pictured records which the messenger ore to him.[2] This portent was the visit in 1518 of Juan de Grijalva to the pot where Vera Cruz now stands; and after the Spaniard sailed away, there ere months of anxiety before word again reached the capital, in 1519, of nother arrival of the white-winged vessels, and this was the coming of Cor- és, who was not long in discovering that the path of his conquest was made lear by the current belief that he was the returned Quetzalcoatl,[3] and by his quick perception of the opportunity which presented itself of combining and leading the enemies of Montezuma.[1]

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[1] Bancroft (v. 466) enumerates the great va- iety of such proofs of disaster, and gives refer- nces (p. 469). Cf. Prescott, i. p. 309.

[2] Tezozomoc (cap. 106) gives the description f the first bringing of the news to Montezuma f the arrival of the Spaniards on the coast.

[3] Brinton's *Amer. Hero Myths*, 139, etc. See, n the prevalence of the idea of the return at ome time of the hero-god, Brinton's *Myths of he New World*, p. 160. "We must remember," he says, "that a fiction built on an idea is infinitely more tenacious of life than a story founded on fact." Brinton (*Myths*, 188) gathers from Gomara, Cogolludo, Villagutierre, and others, instances to show how prevalent in America was the presentiment of the arrival and domination of a white race, — a belief still prevailing among their descendants of the middle regions of America who watch for the coming of Montezuma (*Ibid.* p. 190). Brinton does not seem to recog-

Among what are usually reckoned the civilized nations of middle America, there are two considerable centres of a dim history that have little relation with the story which has been thus far followed. One of these is that of the people of what we now call Guatemala, and the other that of Yucatan. The political society which existed in Guatemala had nothing of the known duration assigned to the more northern people, at least not in essential data; but we know of it simply as a very meagre and perplexing chronology running for the most part back two or three centuries only. Whether the beginnings of what we suppose we know of these people have anything to do with any Toltec migration southward is what archæologists dispute about, and the philologists seem to have the best of the argument in the proof that the tongue of these southern peoples is more like Maya than Nahua. It is claimed that the architectural remains of Guatemala indicate a departure from the Maya stock and some alliance with a foreign stock; and that this alien influence was Nahuan seems probable enough when we consider certain similarities in myth and tradition of the Nahuas and the Quichés. But we have not much even of tradition and myth of the early days, except what we may read in the *Popul Vuh*, where we may make out of it what we can, or even what we please,[2] with some mysterious connection with Votan and Xibalba. Among the mythical traditions of this mythical period, there are the inevitable migration stories, beginning with the Quichés and ending with the coming of the Cakchiquels, but no one knows to a surety when. The new-comers found Maya-speaking people, and called them mem or memes (stutterers), because they spoke the Maya so differently from themselves.

It was in the twelfth or thirteenth century that we get the first traces of any historical kind of the Quichés and of their rivals the Cakchiquels. Of their early rulers we have the customary diversities and inconsistencies in what purports to be their story, and it is difficult to say whether this or the other or some other tribe revolted, conquered, or were beaten, as we read the annals of this constant warfare. We meet something tangible, however, when we learn that Montezuma sent a messenger, who informed the

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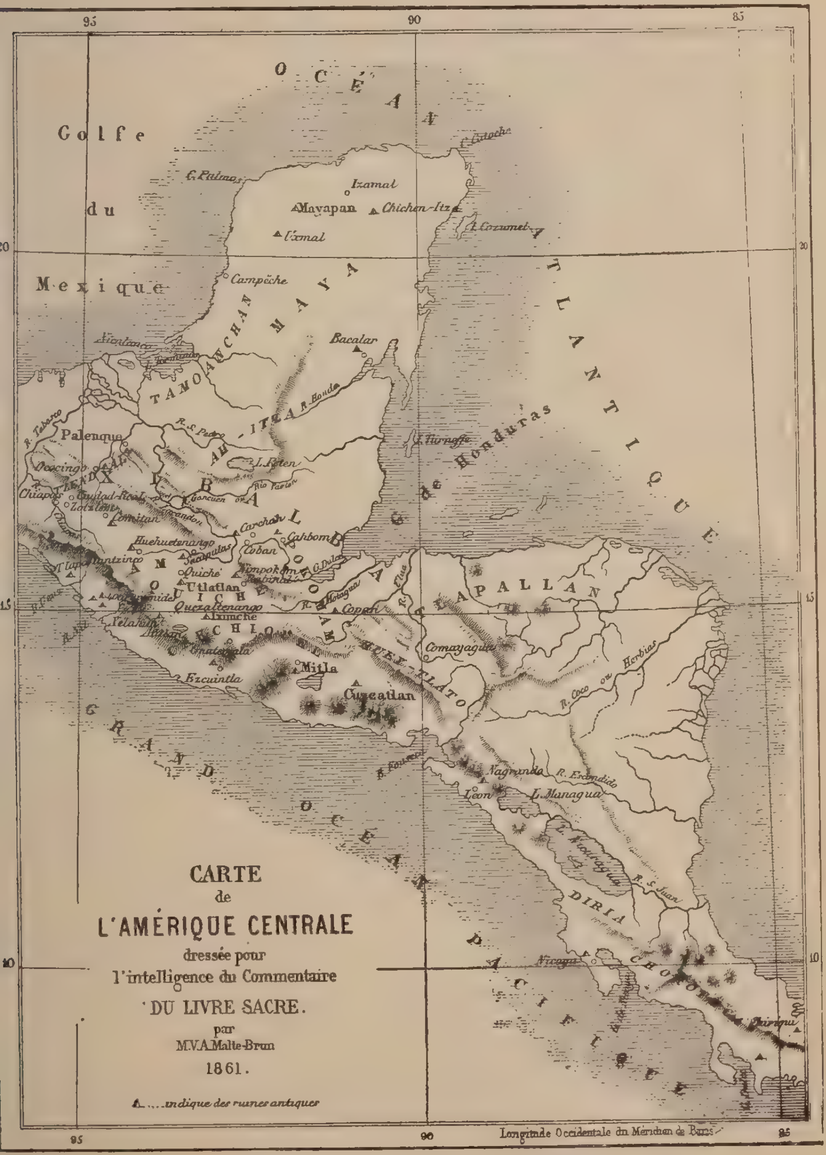
nize the view held by many that the Montezuma of the Aztecs was quite a different being from the demigod of the Pueblas of New Mexico.

[1] It is not easy to reconcile the conflicting statements of the native historians respecting the course of events during the Aztec supremacy, such is the mutual jealousy of the Mexican and Tezcucan writers. Brasseur has satisfied himself of the authenticity of a certain sequence and character of events (*Nations Civilisées*), and Bancroft simply follows him (v. 401). Veytia is occupied more with the Tezcucans than with the Aztecs. The condensed sketch here given follows the main lines of the collated records. We find good pictures of the later history of Mexico and Tlascala, before the Spaniards came, in Prescott (i. book 2d, ch. vi., and book 3d, ch. ii.). Bancroft (v. ch. 10) with his narrative and references helps us out with the somewhat monotonous details of all the districts of Mexico which were outside the dominance of the Mexican valley, as of Cholula, Tlascala, Michoacan, and Oajaca, with the Miztecs and Zapotecs, inhabiting this last province.

[2] Bancroft (v. 543-553).

uichés of the presence of the Spaniards in his capital, which set them stir to be prepared in their turn.



MAP IN BRASSEUR'S POPUL VUH.

It is in the beginning of the sixteenth century that we encounter the rivalries of three prominent peoples in this Guatemala country, and these were the Quichés, the Cakchiquels, and the Zutigils; and of these the Quichés, with their main seat at Utatlan, were the most powerful, though not so much so but the Cakchiquels could get the best of them at times in the wager of war; as they did also finally when the Spaniard Alvarado appeared, with whom the Cakchiquels entered into an alliance that brought the Quichés into sore straits.

A more important nationality attracts us in the Mayas of Yucatan. There can be nothing but vague surmise as to what were the primitive inhabitants of this region; but it seems to be tolerably clear that a certain homogeneousness pervaded the people, speaking one tongue, which the Spaniards found in possession. Whether these had come from the northern regions, and were migrated Toltecs, as some believe, is open to discussion.[1] It has often been contended that they were originally of the Nahua and Toltec blood; but later writers, like Bancroft,[2] have denied it. Brinton discards the Toltec element entirely.

What by a license one may call history begins back with the semi-mythical Zamná, to whom all good things are ascribed — the introduction of the Maya institutions and of the Maya hieroglyphics.[3] Whether Zamná had any connection, shadowy or real, with the great Votanic demigod, and with the establishment of the Xibalban empire, if it may be so called, is a thing to be asserted or denied, as one inclines to separate or unite the traditions of Yucatan with those of the Tzendal, Quiché, and Toltec. Ramon de Ordonez, in a spirit of vagary, tells us that Mayapan, the great city of the early Mayas, was but one of the group of centres, with Palenqué, Tulan, and Copan for the rest, as is believed, which made up the Votanic empire. Perhaps it was. If we accept Brinton's view, it certainly was not. Then Torquemada and Landa tell us that Cukulcan, a great captain and a god, was but another Quetzalcoatl, or Gucumatz. Perhaps he was. Possibly also he was the bringer of Nahua influence to Mayapan, away back in a period corresponding to the early centuries of the Christian era. It is easy to say, in all this confusion, this is proved and that is not. The historian, accustomed to deal with palpable evidence, feels much inclined to leave all views in abeyance.

The Cocomes of Yucatan history were Cukulcan's descendants or followers, and had a prosperous history, as we are told; and there came to live among them the Totul Xius, by some considered a Maya people, who like he Quichés had been subjected to Nahua influences, and who implanted n the monuments and institutions of Yucatan those traces of Nahua character which the archæologists discover.[1] The Totul Xius are placed in Uxmal in the tenth, eleventh, and twelfth centuries, where they flourished along with the Cocomes, and it is to them that it is claimed many of the ruins which now interest us in Yucatan can be traced, though some of them perhaps go back to Zamná and to the Xibalban period, or at least it would be hard to prove otherwise.

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[1] It is so held by Stephens, Waldeck, Mayer, Prichard, Ternaux-Compans, not to name others.

[2] Vol. v. 617.

[3] The Maya calendar and astronomical system, as the basis of the Maya chronology, is explained in the version which Perez gave into Spanish of a Maya manuscript (translated into English by Stephens in his *Yucatan*), and which Valentini has used in his "Katunes of Maya History," in the *Amer. Antiq. Soc. Proc.*, Oct. 1879. On the difficulties of the subject see Brasseur's *Nations Civilisées* (ii. ch. 1). Cf. also his *Landa*, section xxxix., and page 366, from the "Cronologia antigua de Yucatan." Cf. further, Cyrus Thomas's *MS. Troano*, ch. 2, and Powell's *Third Report Bur. of Ethn.*, pp. xxx and 3; Ancona's *Yucatan*, ch. xi.; Bancroft's *Nat. Races*, ii. ch. 24, with references; Short, ch. 9; Brinton's *Maya Chronicles*, introduction, p. 50.

When at last the Cocome chieftains began to oppress their subjects, the Totul Xius gave them shelter, and finally assisted them in a revolt, which succeeded and made Uxmal the supreme city, and Mayapan became a ruin, or at least was much neglected. The dynasty of the Totul Xius then flourished, but was in its turn overthrown, and a period of factions and revolutions followed, during which Mayapan was wholly obliterated, and the Totul Xius settled in Mani, where the Spaniards found them when they invaded Yucatan to make an easy conquest of a divided people.[2]

CRITICAL ESSAY ON THE SOURCES OF INFORMATION.

FROM the conquerors of New Spain we fail to get any systematic portrayal of the character and history of the subjugated people; but nevertheless we are not without some help in such studies from the letters of Cortes,[3] the accounts of the so-called anonymous conqueror,[4] and from what Stephens[5] calls "the hurried and imperfect observations of an unlettered soldier," Bernal Diaz.[6]

We cannot neglect for this ancient period the more general writers on New Spain, some of whom lived near enough to the Conquest to reflect current opinions upon the aboriginal life as it existed in the years next succeeding the fall of Mexico. Such are Peter Martyr, Grynæus, Münster, and Ramusio. More in the nature of chronicles is the *Historia General* of Oviedo (1535, etc.).[7] The *Historia General* of Gomara became generally known soon after the middle of the sixteenth century.[8] The *Rapport*, written about 1560, by Alonzo de Zurita, throws light on the Aztec laws and institutions.[9] Benzoni about this time traversed the country, observing the Indian customs.[1] We find other descriptions of the aboriginal customs by the missionary Didacus Valades, in his *Rhetorica Christiana*, of which the fourth part relates to Mexico.[2] Brasseur says that Valades was well

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[1] Bancroft (v. 624) epitomizes the Perez manuscript given by Stephens, the sole source of this Totul Xiu legendary.

[2] Brasseur's *Nations Civilisées* (i., ii.), with the Perez manuscript, and Landa's *Relacion*, are the sufficient source of the Yucatan history. Bancroft's last chapter of his fifth volume summarizes it.

[3] See Vol. II. p. 402.

[4] See Vol. II. p. 397.

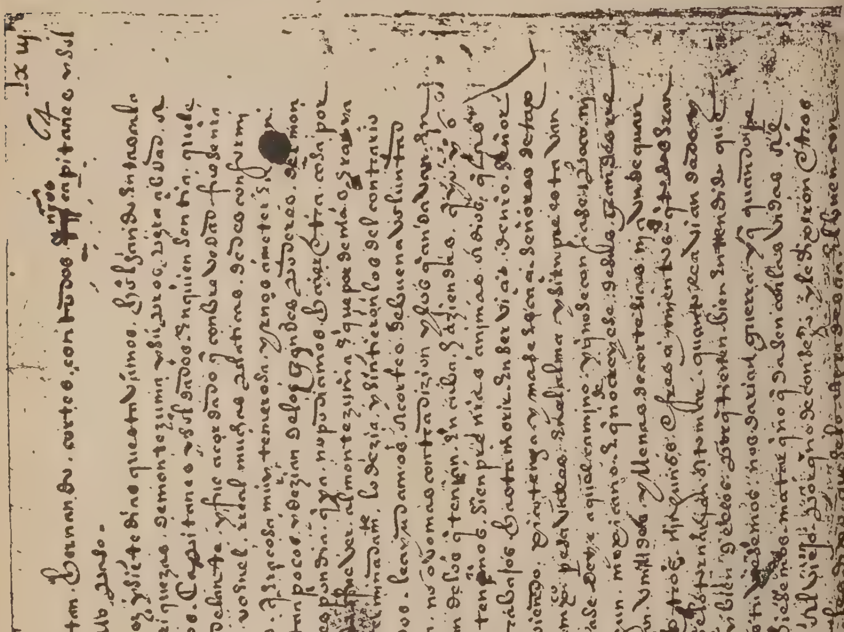
[5] *Central America*, ii. 452.

[6] See Vol. II. p. 414.

[7] See Vol. II. p. 343.

[8] See Vol. II. p. 412.

[9] See Vol. II. p. 417. Cf. Prescott's *Mexico*, i. 50; Bancroft (*Nat. Races*, ii. ch. 14) epitomizes the information on the laws and courts of the Nahua; Bandelier (*Peabody Mus. Repts.*, ii. 446), referring to Zurita's Report, which he characterizes as marked for perspicacity, deep knowledge, and honest judgment, speaks of it as embodying the experience of nearly twenty years, — eleven of which were passed in Mexico, — and in which the author gave answers to inquiries put by the king. "If we could obtain," says Bandelier, "all the answers given to these questions from all parts of Spanish America, and all as elaborate and truthful as those of Zurita, Palacio, and Ondegardo, our knowledge of the aboriginal history and ethnology of Spanish America would be much advanced." Zurita's Report in a French translation is in Ternaux-Compans' *Collection;* the original is in Pacheco's *Docs. inéditos*, but in a mutilated text.



lx iiij

64

Capitulo lxxiiij Como acordo nro. Capitan. hernando. cortes. con todos nros capitanes y sol
dados q fuesemos a mexico. y lo que sobrello paso.

Viendo nro. capitan q avia ya diez y siete dias que estavamos. holgando en tascala
y oyamos dezir delas grandes riquezas. de monteçuma y su prospera cibdad. a
cordo tomar consejo. con todos nros. capitanes y soldados de quien sentia que le
tenjan buena voluntad. para yr adelante. y fue acordado q con brevedad fuese nra
partida. y sobre este camjno. ovo en el real muchas platicas. de desconformi
dad. porq dezian unos soldados. q era cosa muy temerosa. yrnos a meter en [illegible]
fuerte cibdad. siendo nosotros. tan pocos. y dezian delos grandes poderes. de mon
teçuma. y el capitan. cortes. rrespondia. q ya. no podiamos hazer otra. cosa por
q sienpre nra demanda [illegible] fue ver. al monteçuma y que por demas. eran ya
otros consejos. y viendo q tan determinadam. lo dezia. y sintieron los del contrario
parescer que muchos. delos soldados. le ayudamos. a cortes. de buena voluntad
con dezir. adelante en buen ora. no ovo mas contradizion y los q andavan en
otras. platicas. contrarias eran delos q tenjan. en cuba. haziendas. q yo y o
tros pobres soldados ofrecido. tenemos. sienpre nras animas a dios. q las cri
o. y los cuerpos a servicio. y trabajos hasta morir. en servicio. de nro. señor
dios. y de su magestad. pues viendo. xicotenga y masseescaçi. señores de tasca
la. q de hecho q [illegible] yr a mexico pesavales enel alma y sienpre estavan
con cortes. avisandole. q no curase de yr aquel camjno y q no se confiase poco nj
mucho de monteçuma nj de njngun mexicano. y q no creyese de sus grandes re
verencias nj de sus palabras tan umjldes y llenas de cortesias nj aun de quan
tos presentes le a enbiado nj de otros njngunos ofrescimjentos q todos eran
de atraydores. q en una ora se lo tornarian a tomar. quanto le avian dado y
q de noche y de dia se guardase. muy bien de ellos. porq tienen bien entendido que
quando mas descuydados estuviesemos. nos darian guerra y q quando se
[illegible] con ellos q los q pudiesemos matar q no q dasen con las vidas. [illegible]
mancebo. porq no tome armas el viejo. porq no se [illegible] y le dixeron otros

MS. OF BERNAL DIAZ.*

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[1] See Vol. II. p. 346.

[2] It is much we owe to the twelve Franciscan friars who on May 13, 1524, landed in Mexico t convert and defend the natives. It is from thei

* Fac-simile of the beginning of Capitulo LXXIV. of his *Historia Verdadera*, following a plate in the fourt volume of J. M. de Heredia's French translation (Paris, 1877).

nformed and appreciative of the people which he so kindly depicted.[1] By the beginning of the seventeenth century we find in Herrera's *Historia* the most comprehensive of the istorical surveys, in which he summarizes the earlier writers, if not always exactly.[2] Bandelier (*Peabody Mus. Repts.*, ii. 387) says of the ancient history of Mexico that "it appears as if the twelfth century was the limit of definite tradition. What lies beyond it s vague and uncertain, remnants of tradition being intermingled with legends and mythoogical fancies." He cites some of the leading writers as mainly starting in their stories espectively as follows: Brasseur, B. C. 955; Clavigero, A. D. 596; Veytia, A. D. 697; Ixtilxochitl, A. D. 503. Bandelier views all these dates as too mythical for historical invesigations, and finds no earlier fixed date than the founding of Tenochtitlan (Mexico) in A. D. 1325. "What lies beyond the twelfth century can occasionally be rendered of value or ethnological purposes, but it admits of no definite historical use." Bancroft (v. 360) peaks of the sources of disagreement in the final century of the native annals, from the onstant tendency of such writers as Ixtlilxochitl, Tezozomoc, Chimalpain, and Camargo, o laud their own people and defame their rivals.

In the latter part of the sixteenth century the viceroy of Mexico, Don Martin Enriquez, et on foot some measures to gather the relics and traditions of the native Mexicans. Under this incentive it fell to Juan de Tobar, a Jesuit, and to Diego Duran, a Dominican, o be early associated with the resuscitation of the ancient history of the country.

To Father Tobar (or Tovar) we owe what is known as the *Codex Ramirez*, which in the dition of the *Crónica Mexicana*[3] by Hernando de Alvarado Tezozomoc, issued in Mexco (1878), with annotations by Orozco y Berra, is called a *Relacion del orígen de los Indios ue habitan esta nueva España segun sus historias* (José M. Vigil, editor). It is an imortant source of our knowledge of the ancient history of Mexico, as authoritatively interreted by the Aztec priests, from their picture-writings, at the bidding of Ramirez de Funleal, Bishop of Cuenca. This ecclesiastic carried the document with him to Spain, where n Madrid it is still preserved. It was used by Herrera. Chavero and Brinton recognize s representative value.[4]

To Father Duran we are indebted for an equally ardent advocacy of the rights of the atives in his *Historia de las Indias de Nueva-España y islas de Tierra-Firme* (1579–1), which was edited in part (1867), as stated elsewhere[5] by José F. Ramirez, and after n interval completed (1880) by Prof. Gumesindo Mendoza, of the Museo Nacional, — ne perfected work making two volumes of text and an atlas of plates. Both from Tobar nd from Duran some of the contemporary writers gathered largely their material.[6]

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ritings that we must draw a large part of our nowledge respecting the Indian character, conition, and history. These Christian apostles ere Martin de Valencia, Francisco de Soto, Martin de Coruña, Juan Xuares, Antonio de iudad Rodrigo, Toribio de Benavente, Garcia e Cisneros, Luis de Fuensalida, Juan de Ribas, rancisco Ximenez, Andrés de Cordoba, Juan e Palos.

From the *Historia* of Las Casas, particularly rom that part of it called *Apologética historia*, e can also derive some help. (Cf. Vol. II. p. 40.)

[1] Brasseur, *Bib. Mex.-Guat.*, p. 147; Leclerc, . 168.

[2] Herrera is furthermore the source of much hat we read in later works concerning the native eligion and habits of life. See Vol. II. p. 67.

[3] Cf. Vol. II. p. 418.

[4] *Anales del Museo Nacional*, iii. 4, 120; Brinon's *Am. Hero Myths*, 78. Bandelier, in *N. Y. Hist. Soc. Proc.*, November, 1879, used a portion of the MS. as printed by Sir Thomas Phillipps (*Amer. Antiq. Soc. Proc.*, i. 115) under the title of *Historia de los Yndios Mexicanos, por Juan de Tovar; Cura et impensis Dni Thomæ Phillipps, Bart.* (privately printed at Middle Hill, 1860. See *Squier Catalogue*, no. 1417). The document is translated by Henry Phillipps, Jr., in the *Proc. Amer. Philosophical Soc.* (Philad.), xxi. 616.

[5] Vol. II. p. 419. Brasseur de Bourbourg's *Bibl. Mex.-Guat.*, p. 59. He used a MS. copy in the Force collection.

[6] This is true of Acosta and Davila Padilla. The bibliography of Acosta has been given elsewhere (Vol. II. p. 420). His books v., vi., and vii. cover the ancient history of the country. He used the MSS. of Duran (Brasseur, *Bibl. Mex.-Guat.*, p. 2), and his correspondence with Tobar, preserved in the Lenox library, has been edited by Icazbalceta in his *Don Fray Zumár-*

We come to a different kind of record when we deal with the Roman script of the early phonetic rendering of the native tongues. It has been pointed out that we have perhaps the earliest of such renderings in a single sentence in a publication made at Antwerp in 1534, where a Franciscan, Pedro de Gante,[1] under date of June 21, 1529, tells the story of his arriving in America in 1523, and his spending the interval in Mexico and Tezcuco, acquiring a knowledge of the natives and enough of their language to close his epistle with a sentence of it as a sample.[2] But no chance effort of this kind was enough. It took systematic endeavors on the part of the priests to settle grammatical principles and determine phonetic values, and the measure of their success was seen in the speedy way in which the interpretation of the old idiograms was forgotten. Mr. Brevoort has pointed out how much the progress of what may be called native literature, which is to-day so helpful to us in filling the picture of their ancient life, is due to the labors in this process of linguistic transfer of Motolinía,[3] Alonzo de Molina,[4] Andrés de Olmos,[5] and, above all, of the ablest student of the ancient tongues in his day, as Mendieta calls Father Sahagún,[6] who, dying in 1590 at ninety, had spent a good part of a long life so that we of this generation might profit by his records.[7]

SAHAGUN.*

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raga (Mexico, 1881). Of the *Provincia de Santiago* and the *Varia historia* of Davila Padilla, the bibliography has been told in another place. (Cf. Vol. II. pp. 399–400; Sabin, v. 18780–1; Brasseur de Bourbourg's *Bibl. Mex.-Guat.*, p. 53; *Del Monte Library*, no. 126.) Ternaux was not wrong in ascribing great value to the books.

[1] Peter of Ghent. Cf. Vol. II. p. 417.

[2] *Chronica Compendiosissima ab exordio mundi per Amandum Zierixcensem, adjectæ sunt epistolæ ex nova maris Oceani Hispania ad nos transmissæ* (Antwerp, 1534). The subjoined letters here mentioned are, beside that referred to, two others written in Mexico (1531), by Martin of Valencia and Bishop Zumárraga (Sabin, i. no. 994; Quaritch, 362, no. 28583, £7 10). Icazbalceta (*Bib. Mex. del Siglo xvi.*, i. p. 33) gives a long account of Gante. There is a French version of the letter in Ternaux's *Collection.*

[3] See Vol. II. p. 397. Cf. Prescott, ii. 95. The first part of the *Historia* is on the religious rites of the natives; the second on their conversion to Christianity; the third on their chronology, etc.

[4] Cf. Icazbalceta's *Bibl. Mexicana*, p. 220, with references; Pilling's *Proof-sheets*, no. 2600, etc.

[5] Pilling, no. 2817, etc.

[6] Properly, Bernardino Ribeira; named from his birthplace, Sahagún, in Spain. Chavero's *Sahagún* (Mexico, 1877).

[7] A few data can be added to the account of

* After a lithograph in Cumplido's Mexican edition of Prescott's *Mexico.*

Coming later into the field than Duran, Acosta, and Sahagún, and profiting from the labors of his predecessors, we find in the *Monarchia Indiana* of Torquemada[1] the most comprehensive treatment of the ancient history given to us by any of the early Spanish writers. The book, however, is a provoking one, from the want of plan, its chronological confusion, and the general lack of a critical spirit[2] pervading it.

It is usually held that the earliest amassment of native records for historical purposes, after the Conquest, was that made by Ixtlilxochitl of the archives of his Tezcucan line, which he used in his writings in a way that has not satisfied some later investigators. Charnay says that in his own studies he follows Veytia by preference; but Prescott finds beneath the high colors of the pictures of Ixtlilxochitl not a little to be commended. Bandelier,[3] on the other hand, expresses a distrust when he says of Ixtlilxochitl that "he is always a very suspicious authority, not because he is more confused than any other Indian writer, but because he wrote for an interested object, and with a view of sustaining tribal claims in the eyes of the Spanish government."[4]

Among the manuscripts which seem to have belonged to Ixtlilxochitl was the one known in our day under the designation given to it by Brasseur de Bourbourg, *Codex*

Sahagún given in Vol. II. p. 415. J. F. Ramirez completes the bibliography of Sahagún in the *Boletin de la Real Academia de la Historia de Madrid*, vi. 85 (1885). Icazbalceta, having told the story of Sahagún's life in his edition of Mendieta's *Hist. Eclesiastica Indiana* (México, 1870), has given an extended critical and bibliographical account in his *Bibliografia Mexicana* (México, 1886), vol. i. 247–308. Other bibliographical detail can be gleaned from Pilling's *Proof-sheets*, p. 677, etc.; Icazbalceta's *Apuntes;* Beristain's *Biblioteca;* the *Bibliotheca Mexicana* of Ramirez. The list in Adolfo Llanos's *Sahagún y su historia de México* (*Museo Nac. de Méx. Anales*, iii., pt. 3, p. 71) is based chiefly on Alfredo Chavero's *Sahagún* (México, 1877). Brasseur de Bourbourg, in his *Palenqué* (ch. 5), has explained the importance of what Brevoort calls Sahagún's "great encyclopædia of the Mexican Empire." Rosny (*Les documents écrits de l'Antiquité Américaine*, p. 69) speaks of seeing a copy of the *Historia* in Madrid, accompanied by remarkable Aztec pictures. Bancroft, referring to the defective texts of Sahagún in Kingsborough and Bustamante, says: "Fortunately what is missing in one I have always found in the other." He further speaks of the work of Sahagún as "the most complete and comprehensive, so far as aboriginal history is concerned, furnishing an immense mass of material, drawn from native sources, very badly arranged and written." Eleven books of Sahagún are given to the social institutions of the natives, and but one to the conquest. Jourdanet's edition is mentioned elsewhere (Vol. II.).

[1] See Vol. II. p. 421.

[2] Those who used him most, like Clavigero and Brasseur de Bourbourg, complain of this. Torquemada, says Bandelier (*Peabody Mus. Repts.* ii. 119), "notwithstanding his unquestionable credulity, is extremely important on all questions of Mexican antiquities."

[3] *Amer. Antiq. Soc. Proc.*, n. s., i. 105.

[4] Cf. Vol. II. 417; Prescott, i. 13, 163, 193, 196; Bancroft, *Nat. Races*, v. 147; Wilson's *Prehistoric Man*, i. 325. It must be confessed that with no more authority than the old Mexican paintings, interpreted through the understanding of old men and their traditions, Ixtlilxochitl has not the firmest ground to walk on. Aubin thinks that Ixtlilxochitl's confusion and contradictions arise from his want of patience in studying his documents; and some part of it may doubtless have arisen from his habit, as Brasseur says (*Annales de Philosophie Chrétienne*, May, 1855, p. 329), of altering his authorities to magnify the glories of his genealogic line. Max Müller (*Chips from a German Workshop*, i. 322) says of his works: "Though we must not expect to find in them what we are accustomed to call history, they are nevertheless of great historical interest, as supplying the vague outlines of a distant past, filled with migrations, wars, dynasties and revolutions, such as were cherished in the memory of the Greeks in the time of Solon." In addition to his *Historia Chichimeca* and his *Relaciones*, (both of which are given by Kingsborough, while Ternaux has translated portions,) — the MS. of the *Relaciones* being in the Mexican archives, — Ixtlilxochitl left a large mass of his manuscript studies of the antiquities, often repetitionary in substance. Some are found in the compilation made in Mexico by Figueroa in 1792, by order of the Spanish government (Prescott, i. 193). Some were in the Ramirez collection. Quaritch (*MS. Collections*, Jan., 1888, no. 136) held one from that collection, dated about 1680, at £16, called *Sumaria Relacion*, which concerned the ancient Chichimecs. Those which are best known are a *Historia de la Nueva España*, or *Historia del Reyno de Tezcuco*, and a *Historia de Nuestra Señora de Guadalupe*, if this last is by him.

Chimalpopoca,[1] in honor of Faustino Chimalpopoca, a learned professor of Aztec, who assisted Brasseur in translating it. The anonymous author had set to himself the task of converting into the written native tongue a rendering of the ancient hieroglyphics, constituting, as Brasseur says, a complete and regular history of Mexico and Colhuacan. He describes it in his *Lettres à M. le duc de Valmy* (*lettre seconde*) — the first part (in Mexican) being a history of the Chichimecas; the second (in Spanish), by another hand, elucidating the antiquities — as the most rare and most precious of all the manuscripts which escaped destruction, elucidating what was obscure in Gomara and Torquemada.

Brasseur based upon this MS. his account of the Toltec period in his *Nations Civilisées du Mexique* (i. p. lxxviii), treating as an historical document what in later years, amid his vagaries, he assumed to be but the record of geological changes.[2] A similar use was made by him of another MS., sometimes called a Memorial de Colhuacan, and which he named the *Codex Gondra* after the director of the Museo Nacional in Mexico.[3]

Brasseur says, in the *Annales de Philosophie Chrétienne*, that the *Chimalpopoca MS.* is dated in 1558, but in his *Hist. Nat. Civ.*, i. p. lxxix, he says that it was written in 1563 and 1579, by a writer of Quauhtitlan, and not by Ixtlilxochitl, as was thought by Pichardo, who with Gama possessed copies later owned by Aubin. The copy used by Brasseur was, as he says, made from the MS. in the Boturini collection,[4] where it was called *Historia de los Reynos de Colhuacan y México*,[5] and it is supposed to be the original, now preserved in the Museo Nacional de México. It is not all legible, and that institution has published only the better preserved and earlier parts of it, though Aubin's copies are said to contain the full text. This edition, which is called *Anales de Cuauhtitlan*, is accompanied by two Spanish versions, the early one made for Brasseur, and a new one executed by Mendoza and Solis, and it is begun in the *Anales del Museo Nacional* for 1879 (vol. i.).[6]

The next after Ixtlilxochitl to become conspicuous as a collector, was Sigüenza y Gongora (b. 1645), and it was while he was the chief keeper of such records[7] that the Italian traveller Giovanni Francesco Gemelli Carreri examined them, and made some record of them.[8] A more important student inspected the collection, which was later gathered in the College of San Pedro and San Pablo, and this was Clavigero,[9] who manifested a particular interest in the picture-writing of the Mexicans,[10] and has given us a useful account of the antecedent historians.[11]

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[1] *Annales de Philosophie Chrétienne*, May, 1855, p. 326.

[2] In his *Quatre Lettres*, p. 24, he calls it the sacred book of the Toltecs. "C'est le Livre divin lui-même, c'est le Teoamoxtli."

[3] Brasseur's *Lettres à M. le duc de Valmy*, *Lettre seconde*.

[4] *Catálogo*, pp. 17, 18.

[5] Brasseur, *Bibl. Mex. Guat.*, p. 47; *Pinart-Brasseur Catal.*, no. 237.

[6] It has been announced that Bandelier is engaged in a new translation of *The Annals of Quauhtitlan* for Brinton's *Aboriginal Literature series*. Cf. Bancroft, iii. 57, 63, and in vol. v., where he endeavors to patch together Brasseur's fragments of it. Short, p. 241.

[7] Humboldt says that Sigüenza inherited Ixtlilxochitl's collection; and that it was preserved in the College of San Pedro till 1759.

[8] *Giro del mondo*, 1699, vol. vi. Cf. Kingsborough, vol. iv. Robertson attacked Carreri's character for honesty, and claimed it was a received opinion that he had never been out of Italy. Clavigero defended Carreri. Humboldt thinks Carreri's local coloring shows he must have been in Mexico.

[9] Cf. the bibliog., in Vol. II., p. 425, of his *Storia Antica del Messico*.

[10] We owe to him descriptions at this time of the collections of Mendoza, of that in the Vatican, and of that at Vienna. Robertson made an enumeration of such manuscripts; but his knowledge was defective, and he did not know even of those at Oxford.

[11] Robertson was inclined to disparage Clavigero's work, asserting that he could find little in him beyond what he took from Acosta and Herrera "except the improbable narratives and fanciful conjectures of Torquemada and Boturini." Clavigero criticised Robertson, and the English historian in his later editions replied. Prescott points out (i. 70) that Clavigero only knew Sahagún through the medium of Torquemada and later writers. Bancroft (*Nat. Races*, v 149; *Mexico*, i. 700) thinks that Clavigero "owes his reputation much more to his systematic arrangement and clear narration of traditions tha had before been greatly confused, and to th

The best known efforts at collecting material for the ante-Spanish history of Mexico were made by Boturini,[1] who had come over to New Spain in 1736, on some agency for a descendant of Montezuma, the Countess de Santibañez. Here he became interested in the antiquities of the country, and spent eight years roving about the country picking up manuscripts and pictures, and seeking in vain for some one to explain their hieroglyphics. Some action on his part incurring the displeasure of the public authorities, he was arrested, his collection [2] taken from him, and he was sent to Spain. On the voyage an English cruiser captured the vessel in which he was, and he thus lost whatever he chanced to have with him.[3] What he left behind remained in the possession of the government, and became the spoil of damp, revolutionists, and curiosity-seekers. Once again in Spain, Boturini sought redress of the Council of the Indies, and was sustained by it in his petition; but neither he nor his heirs succeeded n recovering his collection. He also prepared a book setting forth how he proposed, by the aid of these old manuscripts and pictures, to resuscitate the forgotten history of the Mexicans. The book [4] is a jumble of notions; but appended to it was what gives it its chief value, a "Catálogo del Museo histórico Indiano," which tells us what the collection was. While it was thus denied to its collector, Mariano Veytia,[5] who had sympathized with Boturini in Madrid, had possession, for a while at east, of a part of it, and made use of it in his *Historia Antigua de Méjico*, but it is denied, as usually stated, that the authorities upon his death (1778) prevented the publication of his book. The student was deprived of Veytia's results till his MS. was ably edited, with notes and an appendix, by C. F. Ortega (Mexico, 1836).[6] Another, who was connected at a later day with the Boturini collection, and who was a more accurate writer han Veytia, was Antonio de Leon y Gama, born in Mexico in 1735. His *Descripcion histórica y Cronológica de las Dos Piedras* (Mexico, 1832) [7] was occasioned by the finding, n 1790, of the great Mexican Calendar Stone and other sculptures in the Square of Mexico. This work brought to bear Gama's great learning to the interpretation of these elics, and to an exposition of the astronomy and mythology of the ancient Mexicans, n a way that secured the commendation of Humboldt.[8]

CLAVIGERO.*

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omission of the most perplexing and contradictory points, than to deep research or new discoveries."

[1] See Vol. II. p. 418. Brasseur de Bourbourg's *Hist. des Nations Civilisées*, p. xxxii. Clavigero had described it.

[2] He had collected nearly 500 Mexican paintngs in all. Aubin (*Notices*, etc., p. 21) says hat Boturini nearly exhausted the field in his searches, and with the collection of Sigüenza he secured all those cited by Ixtlilxochitl and the most of those concealed by the Indians, — of which mention is made by Torquemada, Sahagún, Valadés, Zurita, and others; and that the researches of Bustamante, Cubas, Gondra, and others, up to 1851, had not been able to add much of importance to what Boturini possessed.

[3] This portion of his collection has not been traced. The fact is indeed denied.

[4] *Idea de una nueva historia general de la America septentrional* (Madrid, 1746); Carter-Brown, iii. 817; Brasseur's *Bibl. Mex.-Guat.*, p. 26; Field, *Ind. Bibliog.*, no. 159; Pinart, *Catalogue*, no. 134; Prescott, i. 160.

[5] Brasseur, *Bibl. Mex.-Guat.*, p. 152.

[6] Prescott, i. 24. Harrisse, *Bib. Am. Vet.*, calls Veytia's the best history of the ancient period yet (1866) written.

[7] A second ed. (Mexico, 1832) was augmented with notes and a life of the author, by Carlos Maria de Bustamante; Field, *Ind. Bibliog.*, no. 909; Brasseur's *Bibl. Mex.-Guat.*, p. 68.

[8] Prescott, i. 133. Gama and others collected another class of hieroglyphics, of less importance,

* After a lithograph in Cumplido's Mexican edition of Prescott's *Mexico*, vol. iii.

During these years of uncertainty respecting the Boturini collection, a certain hol upon it seems to have been shared successively by Pichardo and Sanchez, by which in the end some part came to the Museo Nacional, in Mexico.[1] It was also the subject of lawsuits, which finally resulted in the dispersion of what was left by public auction, at a tim when Humboldt was passing through Mexico, and some of its treasures were secured b him and placed in the Berlin Museum. Others passed hither and thither (a few to Kingsborough), but not in a way to obscure their paths, so that when, in 1830, Aubin was sen to Mexico by the French government, he was able to secure a considerable portion o them, as the result of searches during the next ten years. It was with the purpose, some

LORENZO BOTURINI.*

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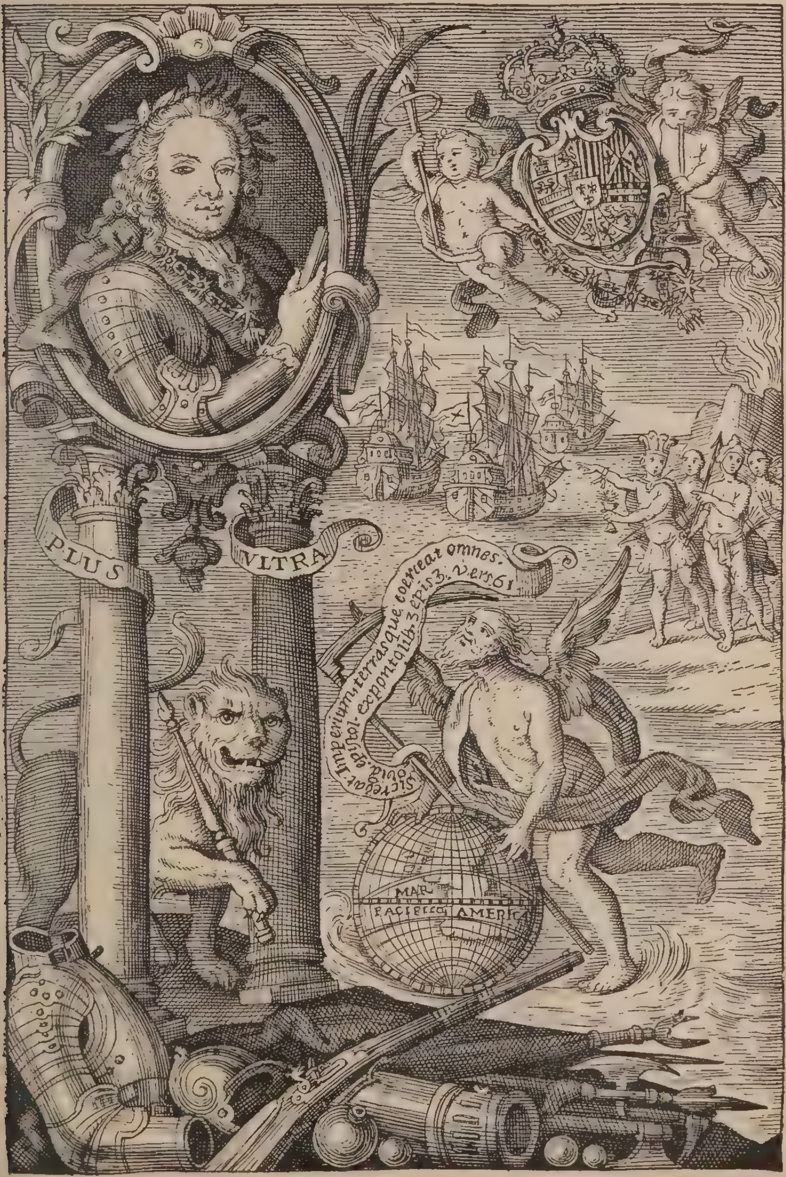
but still interesting as illustrating legal and administrative processes used in later times, in the relations of the Spaniards with the natives; and still others embracing Christian prayers, catechisms, etc., employed by the missionaries in the religious instruction (Aubin, *Notice*, etc., 21). Humboldt (vol. xiii., pl. p. 141) gives "a lawsuit in hieroglyphics."

There was published (100 copies) at Madrid, in 1878, *Pintura del Gobernador, Alcaldes y Regi dores de México, Codice en geroglíficos Méxicano y en lengua Castellana y Azteca, Existente en l Biblioteca del Excmo Señor Duque de Osuna,*— a legal record of the later Spanish courts affecting the natives.

[1] Humboldt describes these collections whic he knew at the beginning of the century, speakin of José Antonio Pichardo's as the finest.

* After a lithograph in Cumplido's Mexican edition of Prescott's *Mexico*. There is an etched portrait i the *Archives de la Soc. Américaine de France, nouvelle série*, i., which is accompanied by an essay on thi "Père de l'Américanisme," and "les sources aux quelles il a puisé son précis d'histoire Américaine," b Léon Cahun.

years later, of assisting in the elucidation and publication of Aubin's collection that the Société Américaine de France was established. The collection of historical records, as


PLUS
VLTRA
Sic regat. Imperium, terrasque coerceat omnes. Ovid. epist. 1. ex ponto lib. 3. epis 3. vers 61
MAR
PACIFICO
AMERICA

FRONTISPIECE OF BOTURINI'S IDEA.

Aubin held it, was described, in 1881, by himself,[1] when he divided his Mexican picture-writings into two classes, — those which had belonged to Boturini, and those which had not.[2] Aubin at the same time described his collection of the Spanish MSS. of Ixtlilxochitl,[3] while he congratulated himself that he had secured the old picture-writings upon which that native writer depended in the early part of his *Historia Chichimeca*. These Spanish MSS. bear the signature and annotations of Veytia.

We have another description of the Aubin collection by Brasseur de Bourbourg.[4]

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[1] *Notice sur une collection d'antiquités Mexicaines*, being an extract from a *Mémoire sur la peinture didactique et l'Écriture figurative des Anciens Mexicains* (Paris, 1851; again, 1859–1861). Cf. papers in *Revue Américaine et Orientale*, 1st ser., iii., iv., and v. Aubin says that Humboldt found that part of the Boturini collection which had been given over to the Mexican archivists diminished by seven eighths. He also shows how Ternaux-Compans (*Crauatés Horribles*, p. 275–289), Rafael Isidro Gondra (in Veytia, *Hist. Ant. de Mex.*, 1836, i. 49), and Bustamante have related the long contentions over the disposition of these relics, and how the Academy of History at Madrid had even secured the suppression of a similar academy among the antiquaries in Mexico, which had been formed to develop the study of their antiquities. It was as a sort of peace-offering that the Spanish king now caused Veytia to be empowered to proceed with the work which Boturini had begun. This allayed the irritation for a while, but on Veytia's death (1769) it broke out again, when Gama was given possession of the collection, which he further increased. It was at Gama's death sold at auction, when Humboldt bought the specimens which are now in Berlin, and Waldeck secured others which he took to Europe. It was from Waldeck that Aubin acquired the Boturini part of his collection. The rest of the collection remained in Mexico, and in the main makes a part at present of the Museo Nacional. But Aubin is a doubtful witness.

Aubin says that he now proposed to refashion the Boturini collection by copies where he could not procure the originals; to add others, embracing whatever he could still find in the hands of the native population, and what had been collected by Veytia, Gama, and Pichardo. In 1851, when he wrote, Aubin had given twenty years to this task, and with what results the list of his MSS., which he appends to the account we have quoted, will show.

These include in the native tongue: —

a. History of Mexico from A. D. 1064 to 1521, in fragments, from Tezozomoc and from Alonso Franco, annotated by Domingo Chimalpain (a copy).

b. Annals of Mexico, written apparently in 1528 by one who had taken part in the defence of Mexico (an original).

c. Several historical narratives on European paper, by Domingo Chimalpain, coming down to A. D. 1591, which have in great part been translated by Aubin, who considers them the most important documents which we possess.

d. A history of Colhuacan and Mexico, lacking the first leaf. This is described as being in the handwriting of Ixtlilxochitl, and Aubin gives the dates of its composition as 1563 and 1570. It is what has later been known as the *Codex Chimalpopoca*.

e. Zapata's history of Tlaxcalla.

f. A copy by Loaysa of an original, from which Torquemada has copied several chapters.

[2] The chief of the Boturini acquisition he enumerates as follows: —

a. Toltec annals on fifty leaves of European paper, cited by Gama in his *Descripcion histórica*. Cf. Brasseur, *Nations Civilisées*, p. lxxvi.

b. Chichimec annals, on Indian paper, six leaves, of which ten pages consist of pictures, the original so-called *Codex Chimalpopoca*, of which Gama made a copy, also in the Aubin collection, as well as Ixtlilxochitl's explanation of it. Aubin says that he has used this account of Ixtlilxochitl to rectify that historian's blunders.

c. Codex on Indian paper, having a picture of the Emperor Xolotl.

d. A painting on prepared skin, giving the genealogy of the Chichimecan chiefs, accompanied by the copies made by Pichardo and Boturini. Cf. *Archives de la Soc. Amér. de France*, 2d ser., i. 283.

e. A synchronical history of Tepechpan and of Mexico, on Indian paper, accompanied by a copy made by Pichardo and an outline sketch of that in the Museo Nacional.

Without specifying others which Aubin enumerates, he gives as other acquisitions the following in particular: —

a. Pichardo's copy of a Codex Mexicanus, giving the history of the Mexicans from thei leaving Aztlan to 1590.

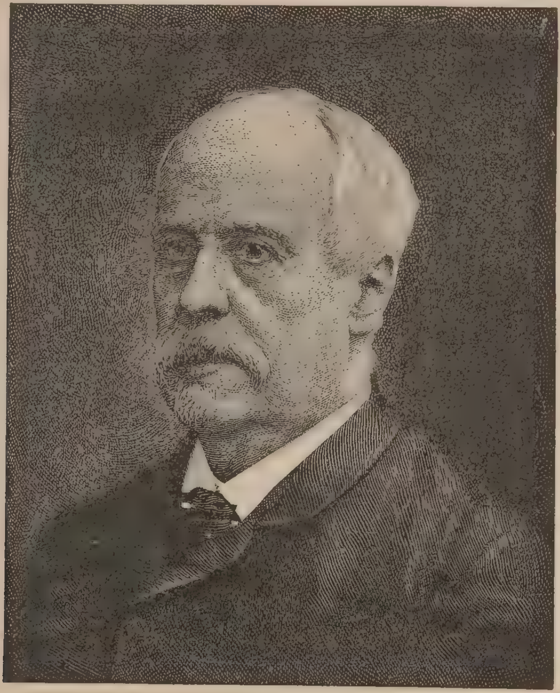
b. An original Mexican history from the departure from Aztlan to 1569.

c. Fragments which had belonged to Sigüenza.

[3] *Notice sur une Collection, etc.*, p. 12.

[4] *Hist. des Nations Civilisées* (i. pp. xxxi, lxxvi, etc.; cf. Müller's *Chips*, i. 317, 320, 323). Brasseur in the same place describes his own collection; and it may be further followed in his *Bibl. Mex.-Guat.*, and in the *Pinart Catalogue*. Dr. Brinton says that we owe much for the preservation during late years of Maya MSS. to Don

If we allow the first place among native writers, using the Spanish tongue, to Ixtlilxochitl, we find several others of considerable service: Diego Muñoz Camargo, a Tlaxcallan Mestizo, wrote (1585) a *Historia de Tlaxcallan*.[1] Tezozomoc's *Crónica Mexicana* is probably best known through Ternaux's version,[2] and there is an Italian abridgment in F. C. Marmocchi's *Raccolta di Viaggi* (vol. x.). The catalogue of Boturini discloses a



ICAZBALCETA.*

uan Pio Perez, and that the best existing col-ection of them is that of Canon Crescencio arrillo y Ancona. José F. Ramirez (see Vol. I. p. 398) is another recent Mexican collector, nd his MSS. have been in one place and another n the market of late years. Quaritch's recent atalogues reveal a number of them, includ-g his own MS. *Catálogo de Colecciones* (Jan., 888, no. 171), and some of his unpublished otes on Prescott, not included in those "notas y clarecimientos" appended to Navarro's trans-tion of the *Conquest of Mexico* (*Catal.*, 1885, o. 28,502). The several publications of Léon e Rosny point us to scattered specimens. In is *Doc. écrits de l'Antiquité Amér.* he gives the c-simile of a colored Aztec map. A MS. in e collection of the Corps Legislatif, in Paris, nd that of the Codex Indiæ Meridionalis are gured in his *Essai sur le déchiffrement, etc.* (pl. ix, x). In the *Archives de la Soc. Amér. de France*, *n. s.*, vol. i., etc., we find plates of the Mappe Tlotzin, and a paper of Madier de Montjau, "sur quelques manuscrits figuratifs de l'Ancien Méxique." Cf. also *Anales del Museo*, viii.

Cf. for further mention of collections the *Revue Orientale et Américaine*; Cyrus Thomas in the *Am. Antiquarian*, May, 1884 (vol. vi.); and the more comprehensive enumeration in the introduction to Domenech's *Manuscrit pictographique*. Orozco y Berra, in the introduction to his *Geografía de las Lenguas y Carta Etnográfica* (Mexico, 1864), speaks of the assistance he obtained from the collections of Ramirez and of Icazbalceta.

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[1] See Vol. II. p. 418.

[2] See Vol. II. p. 418. Bandelier calls this French version "utterly unreliable."

* [After a photograph kindly furnished by himself at the editor's request. — ED.]

MS. by a Cacique of Quiahuiztlan, Juan Ventura Zapata y Mendoza, which brings the *Crónica de la muy noble y real Ciudad de Tlaxcallan* from the earliest times down to 1689; but it is not now known. Torquemada and others cite two native Tezcucan writers, — Juan Bautista Pomar, whose *Relacion de las Antigüedades de los Indios* [1] treats of the manners of his ancestors, and Antonio Pimentel, whose *Relaciones* are well known. The MS. *Crónica Mexicana* of Anton Muñon Chimalpain (b. 1579), tracing the annals from the eleventh century, is or was among the Aubin MSS.[2] There was collected before 1536, under the orders of Bishop Zumárraga, a number of aboriginal tales and traditions, which under the title of *Historia de los Mexicanos por sus Pinturas* was printed by Icazbalceta, who owns the MS., in the *Anales del Museo Nacional* (ii. no. 2).[3]

As regards Yucatan, Brasseur [4] speaks of the scantiness of the historical material, and Brinton [5] does not know a single case where a Maya author has written in the Spanish tongue, as the Aztecs did, under Spanish influence. We owe more to Dr. Daniel Garrison Brinton than to any one else for the elucidation of the native records, and he had had the advantage of the collection of Yucatan MSS. formed by Dr. C. H. Berendt,[6] which, after that gentleman's death, passed into Brinton's hands.

After the destruction of the ancient records by Landa, considerable efforts were made throughout Yucatan, in a sort of reactionary spirit, to recall the lingering recollections of what these manuscripts contained. The grouping of such recovered material became known as Chilan Balam.[7] It is from local collections of this kind that Brinton selected the narratives which he has published as *The Maya Chronicles*, being the first volume of his *Library of Aboriginal American Literature*. The original texts [8] are accompanied by an English translation. One of the books, the Chilan Balam of Mani, had been earlier printed by Stephens, in his *Yucatan*.[9] The only early Spanish chronicle is Bishop Landa's *Relation des choses de Yucatan*,[10] which follows not an original, but a copy of the bishop's text, written, as Brasseur thinks, thirty years after Landa's death, or about 1610, and which Brasseur first brought to the world's attention when he published his edition, with both Spanish and French texts, at Paris, in 1864. The MS. seems to have been incomplete, and was perhaps inaccurately copied at the time. At this date (1864) Brasseur had become an enthusiast for his theory of the personification of the forces of nature in the old recitals, and there was some distrust how far his zeal had affected his text; and moreover he had not published the entire text, but had omitted about one sixth. Brasseur's method of editing became apparent when, in 1884, at Madrid, Juan de Dios de la Rada y Delgado published literally the whole Spanish text, as an appendix to the Spanish translation of Rosny's essay on the hieratic writing. The Spanish editor pointed out some but not all the differences between his text and Brasseur's, — a scrutiny which Brinton has perfected in his *Critical Remarks on the Editions of Landa's Writings* (Philad., 1887).[1]

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[1] This is Beristain's title. Torquemada, Vetancurt, and Sigüenza cite it as *Memorias históricas ;* Brasseur, *Bib. Mexico-Guat.*, p. 122.

[2] Cf. "Les Annales Méxicaines," by Rémi Siméon in the *Archives de la Soc. Amér. de France*, n. s., vol. ii.

[3] It is cited by Chavero as *Codex Zumárraga.*

[4] *Hist. Nat. Civ.*, ii. 577.

[5] *Aboriginal Amer. Authors*, p. 29. Cf. Bandelier's *Bibliography of Yucatan* in *Am. Antiq. Soc. Proc.*, n. s., vol. i. p. 82. Cf. the references in Brasseur, *Hist. Nat. Civ.*, and in Bancroft, *Nat. Races*, v.

[6] Cf. *Mem. of Berendt*, by Brinton (Worcester, 1884).

[7] Cf. Brinton on the MSS. in the languages of Cent. America, in *Amer. Jour. of Science*, xcvii. 222; and his *Books of Chilan Balam, the prophetic and historical records of the Mayas of Yucatan* (Philad., 1882), reprinted from the *Penn Monthly*, March, 1882. Cf. also the *Transactions of the Philad. Numismatic and Antiquarian Soc.*

[8] This is in the alphabet adopted by the early missionaries. The volume contains the "Books of Chilan Balam," written "not later than 1595," and also the "Chac Xulub Chen," written by a Maya chief, Nakuk Pech, in 1562, to recount the story of the Spanish conquest of Yucatan.

[9] This was in 1843, when Stephens made his English translation from Pio Perez's Spanish version, *Antigua Chronologia Yucateca ;* and from Stephens's text, Brasseur gave it a French rendering in his edition of Landa. (Cf. also his *Nat. Civilisées*, ii. p. 2.) Perez, who in Stephens's opinion (*Yucatan*, ii. 117) was the best Maya scholar in that country, made notes, which Valentini published in his "Katunes of Maya History," in the *Pro. of the Amer. Antiq. Soc.*, Oct., 1879 (Worcester, 1880), but they had earlier been printed in Carrillo's *Hist. y Geog. de Yucatan* (Merida, 1881). Bancroft (*Nat. Races*, v. 624) reprints Stephens's text with notes from Brasseur.

The books of Chilan Balam were used both by Cogolludo and Lizana; and Brasseur printed some of them in the *Mission Scientifique au Méxique.* They are described in Carrillo's *Disertacion sobre la historia de lengua Maya ó Yucateca* (Merida, 1870).

[10] Brasseur, *Bib. Mex.-Guat.*, p. 30. See Vol II. p. 429. The Spanish title is *Relacion de la Cosas de Yucatan.*

PROFESSOR DANIEL G. BRINTON.

Landa gives extracts from a work by Bernardo Lizana, relating to Yucatan, of which it is difficult to get other information.[2] The earliest published historical narrative was Cogolludo's *Historia de Yucathan* (Madrid, 1688).[3] Stephens, in his study of the subject,

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[1] From the *Proc. of the Amer. Philos. Soc.*, xxiv.

[2] Cf. Bandelier in *Am. Antiq. Soc. Proc.*, n. s., vol. i. p. 88.

[3] The second edition was called *Los tres Siglos de la Dominacion Española en Yucatan* (Campeche and Merida, 2 vols., 1842, 1845). It was edited unsatisfactorily by Justo Sierra. Cf. Vol. II. p. 429; Brasseur, *Bib. Mex.-Guat.*, p. 47.

This, like Juan de Villagutierre Soto-Mayor's *Historia de la Conquista de la Provincia de el Itza, reduccion, y progressos de la de el Lacandon, y otras naciones de Indios Barbaros, de la mediacion de el Reyno de Gautimala, a las Provincias de Yucatan, en la America Septentrional* (Madrid, 1701), (which, says Bandelier, is of importance for that part of Yucatan which has remained unexplored), has mostly to do with the Indians under the Spanish rule, but the books are not devoid of usefulness in the study of the early tribes.

Of the modern comments on the Yucatan ancient history, those of Brasseur in his *Nations Civilisées* are more to be trusted than his introduction to his edition of Landa, which needs to be taken with due recognition of his later speaks of it as "voluminous, confused, and ill-digested," and says "it might almost be called a history of the Franciscan friars, to which order Cogolludo belonged."[1]

The native sources of the aboriginal history of Guatemala, and of what is sometimes called the Quiché-Cakchiquel Empire, are not abundant,[2] but the most important are the *Popul Vuh*, a traditional book of the Quichés, and the *Memorial de Tecpan-Atitlan.*

The *Popul Vuh* was discovered in the library of the university at Guatemala, probably not far from 1700,[3] by Francisco Ximenez, a missionary in a mountain village of the country. Ximenez did not find the original Quiché book, but a copy of it, made after it was lost, and later than the Conquest, which we may infer was reproduced from memory to replace the lost text, and in this way it may have received some admixture of Christian thought.[4] It was this sort of a text that Ximenez turned into Spanish; and this version, with the copy of the Quiché, which Ximenez also made, is what has come down to us. Karl Scherzer, a German traveller[5] in the country, found Ximenez' work, which had seemingly passed into the university library on the suppression of the monasteries, and which, as he supposes, had not been printed because of some disagreeable things in it about the Spanish treatment of the natives. Scherzer edited the MS., which was published as *Las Historias del Origen de los Indios de Esta Provincia de Guatemala*[6] (Vienna, 1857).

Brasseur, who had seen the Ximenez MSS. in 1855, considered the Spanish version untrustworthy, and so with the aid of some natives he gave it a French rendering, and republished it a few years later as *Popol Vuh. Le Livre sacré et les Mythes de l'antiquité américaine, avec les livres héroïques et historiques des Quichés. Ouvrage original des indigènes de Guatémala, texte Quiché et trad. française en regard, accompagnée de notes philologiques et d'un commentaire sur la mythologie et les migrations des peuples anciens de l'Amérique, etc., composé sur des documents originaux et inédits* (Paris, 1861).

Brasseur's introduction bears the special title: *Dissertation sur les mythes de l'antiquité Américaine sur la probabilité des Communications existant anciennement d'un Continent à l'autre, et sur les migrations des peuples indigènes de l'Amérique,* — in which he took occasion to elucidate his theory of cataclysms and Atlantis. He speaks of his annotations as the results of his observations among the Quichés and of his prolonged studies. He calls the *Popul Vuh* rather a national than a sacred book,[7] and thinks it the original in

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vagaries; and Brinton has studied their history at some length in the introduction to his *Maya Chronicles.* The first volume of Eligio Ancona's *Hist. de Yucatan* covers the early period. See Vol. II. p. 429. Brinton calls it "disappointingly superficial." There is much that is popularly retrospective in the various and not always stable contributions of Dr. Le Plongeon and his wife. The last of Mrs. Le Plongeon's papers is one on "The Mayas, their customs, laws, religion," in the *Mag. Amer. Hist.*, Aug., 1887. Bancroft's second volume groups the necessary references to every phase of Maya history. Cf. Charnay, English translation, ch. 15; and Geronimo Castillo's *Diccionario Histórico, biográfico y monumental de Yucatan* (Mérida, 1866). Of Crescencio Carrillo and his *Historia Antigua de Yucatan* (Mérida, 1881), Brinton says: "I know of no other Yucatecan who has equal enthusiasm or so just an estimate of the antiquarian riches of his native land" (*Amer. Hero Myths*, 147). Bastian summarizes the history of Yucatan and Guatemala in the second volume of his *Culturländer des alten Amerika.*

[1] *Yucatan*, ii. 79.

[2] See C. H. Berendt on the hist. docs. of Guatemala in *Smithsonian Report*, 1876. There is a partial bibliography of Guatemala in W. T. Brigham's *Guatemala the land of the Quetzal* (N. Y., 1887), and another by Bandelier in the *Am. Antiq. Soc. Proc.*, n. s., vol. i. p. 101. The references in Brasseur's *Hist. Nations Civilisées*, and in Bancroft's *Native Races*, vol. v., will be a ready means for collating the early sources.

[3] Scherzer and Brasseur are somewhat at variance here.

[4] "There are some coincidences between the Old Testament and the Quiché MS. which are certainly startling." Müller's *Chips*, i. 328.

[5] *Wanderungen durch die mittel-Amerikanischen Freistaaten* (Braunschweig, 1857 — an English translation, London, 1857).

[6] Leclerc, no. 1305.

[7] H. H. Bancroft, *Nat. Races*, ii. 115; iii., ch. 2, and v. 170, 547, gives a convenient condensation of the book, and says that Müller misconceives in some parts of his summary, and that Baldwin in his *Ancient America*, p. 191, follows Müller. Helps, *Spanish Conquest*, iv. App., gives a brief synopsis, — the first one done in English

some part of the "Livre divin des Toltèques," the Teo-Amoxtli.[1] Brinton avers that neither Ximenez nor Brasseur has adequately translated the Quiché text,[2] and sees no reason to think that the matter has been in any way influenced by the Spanish contact, emanating indeed long before that event; and he has based some studies upon it.[3] In this opinion Bandelier is at variance, at least as regards the first portion, for he believes it to have been *written* after the Conquest and under Christian influences.[4] Brasseur in some of his other writings has further discussed the matter.[5]

The *Memorial of Tecpan-Atitlan*, to use Brasseur's title, is an incomplete MS.,[6] found in 1844 by Juan Gavarrete in rearranging the MSS. of the convent of San Francisco, of Guatemala, and it was by Gavarrete that a Spanish version of Brasseur's rendering was printed in 1873 in the *Boletin de la Sociedad económica de Guatemala* (nos. 29–43). This translation by Brasseur, made in 1856, was never printed by him, but, passing into Pinart's hands with Brasseur's collections,[7] it was entrusted by that collector to Dr. Brinton, who selected the parts of interest (46 out of 96 pp.), and included it as vol. vi. in his *Library of Aboriginal American Literature*, under the title of *The annals of the Cakchiquels. The original text, with a translation, notes, and introduction* (Philadelphia, 1885).

Brinton disagrees with Brasseur in placing the date of its beginning towards the opening of the eleventh century, and puts it rather at about A. D. 1380. Brasseur says he received the original from Gavarrete, and it would seem to have been a copy made between 1620 and 1650, though it bears internal evidence of having been written by one who was of adult age at the time of the Conquest.

Brinton's introduction discusses the ethnological position of the Cakchiquels, who he thinks had been separated from the Mayas for a long period.

The next in importance of the Guatemalan books is the work of Francisco Antonio de Fuentes y Guzman, *Historia de Guatemala, ó Recordación florida escrita el siglo xvii., que publica por primera vez con notas é ilustraciones J. Zaragoza* (Madrid, 1882–83), being vols. 1 and 2 of the *Biblioteca de los americanistas*. The original MS., dated 1690, is in the archives of the city of Guatemala. Owing to a tendency of the author to laud the natives, modern historians have looked with some suspicion on his authority, and have pointed out inconsistencies and suspected errors.[1] Of a later writer, Ramon de Ordoñez (died about 1840), we have only the rough draught of a *Historia de la creacion del Cielo y de la tierra, conforme al sistema de la gentilidad Americana*, which is of importance for traditions.[2] This manuscript, preserved in the Museo Nacional in Mexico, is all that now exists, representing the perfected work. Brasseur (*Bib. Mex.-Guat.*, 113) had a copy of this draught (made in 1848–49). The original fair copy was sent to Madrid for the press, and it is suspected that the Council for the Indies suppressed it in 1805. Ramon cites a manuscript *Hist. de la Prov. de San Vicente de Chiappas y Goathemala*, which is perhaps the same as the *Crónica de la Prov. de Chiapas y Guatemala*, of which the seventh book is in the Museo Nacional (*Am. Antiq. Soc. Proc.*, n. s., i. 97; Brasseur, *Bib. Mex.-Guat.*, 157).

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[1] Max Müller dissents from this. *Chips*, i. 326. Müller reminds us, if we are suspicious of the disjointed manner of what has come down to us as the *Popul Vuh*, that "consecutive history is altogether a modern idea, of which few only of the ancient nations had any conception. If we had the exact words of the *Popul Vuh*, we should probably find no more history there than we find in the Quiché MS. as it now stands."

[2] Cf. *Aborig. Amer. Authors*, p. 33.

[3] *The names of the gods in the Kiché Myths of Central America* (Philad., 1881), from the *Proc. Amer. Philos. Soc.* He gives his reasons (p. 4) for the spelling *Kiché*.

[4] Cf. *Am. Antiq. Soc. Proc.*, n. s., vol. i. 109; and his paper, "On the Sources of the Aboriginal Hist. of Spanish America," in the *Am. Asso. Adv. Sci. Proc.*, xxvii. 328 (Aug., 1878). In the *Peabody Mus. Eleventh Report*, p. 391, he says of it that "it appears to be for the first chapters an evident fabrication, or at least accommodation of Indian mythology to Christian notions, — a pious fraud; but the bulk is an equally evident collection of original traditions of the Indians of Guatemala, and as such the most valuable work for the aboriginal history and ethnology of Central America."

[5] *Hist. Nat. Civ.*, i. 47. *S'il existe des sources de l'histoire primitive du Méxique dans les monuments égyptiens et de l'histoire primitive de l'ancien monde dans les monuments Américains?* (1864), which is an extract from his *Landa's Relation.* Cf. Bollaert, in the *Royal Soc. of Lit. Trans.*, 1863. Brasseur (*Bib. Mex.-Guat.*, p. 45; Pinart, no. 231) also speaks of another Quiché document, of which his MS. copy is entitled *Titulo de los Señores de Totonicapan, escrito en lengua Quiché, el año de 1554, y traducido al Castellano el año de 1834, por el Padre Dionisio José Chonay, indígena*, which tells the story of the Quiché race somewhat differently from the *Popul Vuh*.

[6] See Vol. II. p. 419.

[7] It stands in Brasseur's *Bib. Mex.-Guat.*, p. 13, as *Memorial de Tecpan-Atitlan* (*Solola*), *histoire des deux familles royales du royaume des Cakchiquels d'Iximché ou Guatémala, rédigé en langue Cakchiquèle par le prince Don Francisco Ernantez Arana-Xahila, des rois Ahpozotziles*, where Brasseur speaks of it as analogous to the *Popul Vuh*, but with numerous and remarkable variations. The MS. remained in the keeping of Xahila till 1562, when Francisco Gebuta Queh received it and continued it (*Pinart Catalogue*, no. 35).

The work of Antonio de Remesal is sometimes cited as *Historia general de las Indias occidentales, y particular de la gobernacion de Chiapas y Guatemala*, and sometimes as *Historia de la provincia de San Vicente de Chyapa y Guatemala* (Madrid, 1619, 1620).[3]

Bandelier (*Amer. Antiq. Soc. Proc.*, i. 95) has indicated the leading sources of the history of Chiapas, so closely associated with Guatemala. To round the study of the aboriginal period of this Pacific region, we may find something in Alvarado's letters on the Conquest;[4] in Las Casas for the interior parts, and in Alonso de Zurita's *Relacion*, 1560,[5] as respects the Quiché tribes, which is the source of much in Herrera.[6] For Oajaca (Oaxaca, Guaxaca) the special source is Francisco de Burgoa's *Geográfica descripcion de la parte septentrional del Polo Artico de la América*, etc. (México, 1674), in two quarto volumes, — or at least it is generally so regarded. Bandelier, who traces the works on Oajaca (*Amer. Antiq. Soc. Proc.*, n. s., i. 115), says there is a book of a modern writer, Juan B. Carriedo, which follows Burgoa largely. Brasseur (*Bib. Mex.-Guat.*, p. 33) speaks of Burgoa as the only source which remains of the native history of Oajaca. He says it is a very rare book, even in Mexico. He largely depends upon its full details in some parts of his *Nations Civilisées* (iii. livre 9). Alonso de la Rea's *Crónica de Mechoacan* (Mexico, 1648) and Basalenque's *Crónica de San Augustin de Mechoacan* (Mexico, 1673) are books which Brinton complains he could find in no library in the United States.

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[1] See Vol. II. 419; Bancroft, *Nat. Races*, v. 564; Bandelier in *Am. Antiq. Soc. Proc.*, i. 105. Bandelier (*Peabody Mus. Repts.*, ii. 391) says that it is now acknowledged that the *Recordacion florida* of Fuentes y Guzman is "full of exaggerations and misstatements." Brasseur (*Bib. Mex.-Guat.*, pp. 65, 87), in speaking of Fuentes' *Noticia histórica de los indios de Guatemala* (of which manuscript he had a copy), says that he had access to a great number of native documents, but profited little by them, either because he could not read them, or his translators deceived him. Brasseur adds that Fuentes' account of the Quiché rulers is "un mauvais roman qui n'a pas le sens commun." This last is a manuscript used by Domingo Juarros in his *Compendio de la historia de la ciudad de Guatemala* (Guatemala, 1808–1818, in two vols. — become rare), but reprinted in the *Museo Guatemalteco*, 1857. The English translation, by John Baily, a merchant living in Guatemala, was published as a *Statistical and Commercial History of Guatemala* (Lond., 1823). Cf. Vol. II. p. 419. Francisco Vazquez depended largely on native writers in his *Crónica de la Provincia de Guatemala* (Guatemala, 1714–16). (See Vol. II. p. 419.)

[2] See note in Bancroft, iii. 451.

[3] Vol. II. 419. Helps (iii. 300), speaking of Remesal, says: "He had access to the archives of Guatemala early in the seventeenth century, and he is one of those excellent writers so dear to the students of history, who is not prone to declamation, or rhetoric, or picturesque writing, but indulges us largely by the introduction everywhere of most important historical documents, copied boldly into the text."

[4] Vol. II. 419.

[5] Vol. II. 417.

[6] E. G. Squier printed in 1860 (see Vol. II. p. vii.) Diego Garcia de Palacio's *Carta dirigida al Rey de España, año 1576*, under the English title of *Description of the ancient Provinces of Guazacupan, Izalco, Cuscatlan, and Chiquimula in Guatemala*, which is also included in Pacheco's *Coleccion*, vol. vi. Bandelier refers to Estevan Aviles' *Historia de Guatemala desde los tiempos de los Indios* (Guatemala, 1663). A good reputation belongs to a modern work, Francisco de Paula Garcia Pelaez's *Memorias para la Historia del antiguo reyno de Guatemala* (Guatemala, 1851–53, in three vols.).

We trace the aboriginal condition of Nicaragua in Peter Martyr, Oviedo, Torquemada, nd Ixtlilxochitl.[1]

The earliest general account of all these ancient peoples which we have in English is n the *History of America*, by William Robertson, who describes the condition of Mexico t the time of the Conquest, and epitomizes the early Spanish accounts of the natives. 'rescott and Helps followed in his steps, with new facilities. Albert Gallatin brought the owers of a vigorous intellect to bear, though but cursorily, upon the subject, in his Notes on the semi-civilized nations of Mexico, Yucatan, and Central America," in the *mer. Ethnological Society's Transactions* (N. Y., 1845, vol. i.), and he was about the rst to recognize the dangerous pitfalls of the pseudo-historical narratives of these peo-les. The *Native Races*[2] of H. H. Bancroft was the first very general sifting and massing n English of the great confusion of material upon their condition, myths, languages, an-quities, and history.[3] The archæological remains are treated by Stephens for Yucatan nd Central America, by Dr. Le Plongeon[4] for Yucatan, by Ephraim G. Squier for Nica-agua and Central America in general,[5] by Adolphe F. A. Bandelier in his communica-ons to the Peabody Museum and to the Archæological Institute of America,[6] and by 'rofessor Daniel G. Brinton in his editing of ancient records[7] and in his mythological nd linguistic studies, referred to elsewhere. To these may be added, as completing the nglish references, various records of personal observations.[8]

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[1] For details follow the references in Bras-eur's *Nat. Civil.*; Bancroft's *Nat. Races*; Ste-hens's *Nicaragua*, ii. 305, etc. See the introd. f Brinton's *Güegüence* (Philad., 1883), for the ahuas and Mangues of Nicaragua.

[2] Leclerc, no. 1070. Bancroft summarized the istory of these ancient peoples in his vol. ii. h. 2, and goes into detail in his vol. v.

[3] He condenses the early Mexican history in is *Mexico*, i. ch. 7. There are recent condensed arratives, in which avail has been had of the test developments, in Baldwin's *Ancient Amer-a*, ch. 4, and Short's *North Americans of An-quity*.

[4] Mrs. Alice D. Le Plongeon has printed vari-us summarized popular papers, like the "Con-uest of the Mayas," in the *Mag. Amer. Hist.*, pril and June, 1888.

[5] A list of Squier's published writings was ap-ended to the *Catalogue of Squier's Library*, repared by Joseph Sabin (N. Y., 1876), as sold that time. By this it appears that his earliest udy of these subjects was a review of Buxton's *igrations of the Ancient Mexicans*, read before e London Ethnolog. Soc., and printed in 1848 the *Edinb. New Philosoph. Mag.*, vol. xlvi. is first considerable contribution was his *Trav-s in Cent. America, particularly in Nicaragua, ith a description of its aboriginal monuments* London and N. Y., 1852–53). He supple-ented this by some popular papers in *Harper's ag.*, 1854, 1855. (Cf. *Hist. Mag.*, iv. 65; *Put-am's Mag.*, xii. 549.) A year or two later he ommunicated papers on "Les Indiens Guatu-os du Nicaragua," and "Les indiens Xicaques Honduras," to the *Nouvelles Annales des oyages* (1856, 1858), and "A Visit to the Gua-quero Indians" to *Harper's Mag.*, 1859. In 1860, Squier projected the publication of a *Collection* of documents, but only a letter (1576) of Palacio was printed (Icazbalceta, *Bibl. Mex.*, i. p. 326). He had intended to make the series more correct and with fewer omissions than Ternaux had allowed himself. His material, then the result of ten years' gathering, had been largely secured through the instrumentality of Buckingham Smith. (See Vol. II. p. vii.)

[6] "Art of war and mode of warfare of the Ancient Mexicans" (*Peabody Mus. Rept.*, no. x.).

"Distribution and tenure of lands, and the customs with respect to inheritance among the ancient Mexicans" (*Ibid.* no. xi.).

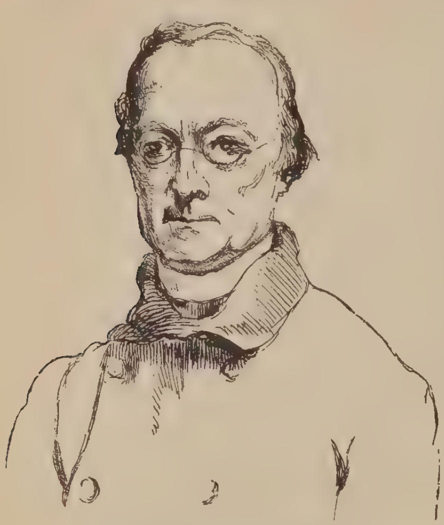
"Special organizations and mode of government of the ancient Mexicans" (*Ibid.* no. xii.).

These papers reveal much thorough study of the earlier writers on the general condition of the ancient people of Mexico, and the student finds much help in their full references. It was this manifestation of his learning that led to his appointment by the Archæological Institute,— the fruit of his labor in their behalf appearing in his *Report of an Archæological Tour in Mexico, 1881*, which constitutes the second volume (1884) of the *Papers* of that body. In his third section he enlarges upon the condition of Mexico at the time of the Conquest. His explorations covered the region from Tampico to Mexico city.

[7] *Library of Aboriginal American Literature*, (Philadelphia.)

[8] James H. McCulloh, an officer of the U. S. army, published *Researches on America* (Balt., 1816), expanded later into *Researches, philosophical and antiquarian, concerning the original History of America* (Baltimore, 1829). His fifth and sixth parts concern the "Institutions of the Mex-

During the American Civil War, when there were hopes of some permanence for French influence in Mexico, the French government made some organized efforts to further the study of the antiquities of the country, and the results were published in the *Archives de la Commission Scientifique du Mexique* (Paris, 1864–69, in 3 vols.).[1] The Abbé Brasseur de Bourbourg, who took a conspicuous part in this labor, has probably done more than any other Frenchman to bring into order the studies upon these ancient races, and in some directions he is our ultimate source. Unfortunately his character as an archæological expounder did not improve as he went on, and he grew to be the expositor of some wild notions tha have proved acceptable to few. He tells us that he first had his attention turned to American archæology by the report, which had a short run in Euro pean circles, of the discovery of a Macedonian helmet and weapons in Brazil in 1832, and by a review of Rio's report on Palenqué, which he read in the *Journal des Savants.* Upon coming to America, fresh from his studies in Rome, he was made professor of history in the seminary at Quebec in 1845–46, writing at that time a *Histoire du Canada*, of little value. Later, in Boston, he perfected his English and read Prescott. Then we find him at Rome poring over the *Codex Vaticanus*, and studying the *Codex Borgianus* in the library of the Propaganda. In 1848 he returned to the United States, and, embarking a New Orleans for Mexico, he found himself on shipboard in the company of the new French minister, whom he accompanied, on landing, to the city of Mexico, being made almoner t the legation. This official station gave him some advantage in beginning his researches in which Rafael Isidro Gondra, the director of the Museo, with the curators of the vice regal archives, and José Maria Andrade, the librarian of the university, assisted him



BRASSEUR DE BOURBOURG.*

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ican Empire," and "The nations inhabiting Guatemala" (Field, no. 987).

G. F. Lyon's *Journal of a residence and tour in the Republic of Mexico* (Lond., 1826, 1828).

Brantz Mayer's *Mexico as it was and as it is*, and his more comprehensive *Mexico, Aztec, Spanish and Republican* (Hartford, 1853), which includes an essay on the ancient civilization. Mayer had good opportunities while attached to the United States legation in Mexico, but of course he wrote earlier than the later developments (Field, no. 1038).

The distinguished English anthropologist, E. B. Tylor's *Anahuac; or, Mexico and the Mexicans, ancient and modern* (London, 1861), is a readable rendering of the outlines of the ancient history, and he describes such of the archæological remains as fell in his way.

H. C. R. Becher's *Trip to Mexico* (Londo 1880) has an appendix on the ancient races.

F. A. Ober's *Travels in Mexico* (1884).

[1] The important papers are: — Tome I. Bra seur de Bourbourg. *Esquisses d'histoire, d'a chéologie, d'ethnographie et de linguistique.* Gro *Renseignements sur les monuments anciens situ dans les environs de Mexico.* — Tome II. Br. d Bourbourg. *Rapport sur les ruines de Mayapa et d'Uxmal au Yucatan.* Hay. *Renseignemen sur Texcoco.* Dolfus, Montserrat et Pavie. *M moires et notes géologiques.* — Tome III. Doutr laine. *Rapports sur les ruines de Mitla, sur l pierre de Tlalnepantla, sur un mss. mexicai (avec fac-simile).* Guillemin Tarayre. *Rappor sur l'exploration minéralogique des régions mex caines.* Siméon. *Note sur la numération d anciens Mexicains.*

* Follows an etching published in the *Annuaire de la Société Américaine de France*, 1875. He died a Nice, Jan. 8, 1874, aged 59 years.

ater he gave himself to the study of the Nahua tongue, under the guidance of Faustino himalpopoca Galicia, a descendant of a brother of Montezuma, then a professor in the llege of San Gregorio. In 1851 he was ready to print at Mexico, in French and Span- n, his *Lettres pour servir d'introduction à l'histoire primitive des anciennes nations civi- ées du Méxique*, addressed (October, 1850) to the Duc de Valmy, in which he sketched e progress of his studies up to that time. He speaks of it as "le premier fruit de mes avaux d'archéologie et d'histoire méxicaines."[1] It was this brochure which introduced m to the attention of Squier and Aubin, and from the latter, during his residence in aris (1851–54), he received great assistance. Pressed in his circumstances, he was liged at this time to eke out his living by popular writing, which helped also to enable m to publish his successive works.[2] To complete his Central American studies, he ent again to America in 1854, and in Washington he saw for the first time the texts of as Casas and Duran, in the collection of Peter Force, who had got copies from Madrid. e has given us[3] an account of his successful search for old manuscripts in Central Amer- a. Finally, as the result of all these studies, he published his most important work,— *'istoire des nations civilisées du Méxique et de l'Amérique centrale durant les siècles an- rieurs à C. Colomb, écrite sur des docs. origin. et entièrement inédits, puisés aux anciennes rchives des indigènes* (Paris, 1857–58).[4] This was the first orderly and extensive effort combine out of all available material, native and Spanish, a divisionary and consecutive story of ante-Columbian times in these regions, to which he added from the native urces a new account of the conquest by the Spaniards. His purpose to separate the storic from the mythical may incite criticism, but his views are the result of more labor d more knowledge than any one before him had brought to the subject.[5] In his later ıblications there is less reason to be satisfied with his results, and Brinton[6] even thinks at "he had a weakness to throw designedly considerable obscurity about his authorities d the sources of his knowledge." His fellow-students almost invariably yield praise to s successful research and to his great learning, surpassing perhaps that of any of them, ıt they are one and all chary of adopting his later theories.[7] These were expressed at ngth in his *Quatre lettres sur le Mexique. Exposition du système hiéroglyphique mexi- in. La fin de l'âge de pierre. Époque glaciaire temporaire. Commencement de l'âge bronze. Origines de la civilisation et des religions de l'antiquité. D'après le Teo-*

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[1] He says the work is very rare. A copy ven by him is in Harvard College library. *ib. Mex.-Guat.*, p. 26.

[2] His *Palenqué*, at a later day, was published the French government (*Quatre Lettres, avant- opos*).

[3] Introduction of his *Hist. Nations Civilisées.*

[4] Tome I. xcii. et 440 pp. *Les temps héroïques l'histoire de l'empire des Toltèques.*—Tome II. 6 pp. *L'histoire du Yucatan et du Guatémala, ec celle de l'Anahuac durant le moyen âge az- que, jusqu'à la fondation de la royauté à Mex-* .—Tome III. 692 pp. *L'histoire des Etats du ichoacan et d'Oaxaca et de l'empire de l'Ana- ac jusqu'à l'arrivée des Espagnols. Astrono- ie, religion, sciences et arts des Aztèques, etc.*— ome IV. vi. et 851 pp. *Conquête du Mexique, Michoacan et du Guatémala, etc. Etablisse- ent des Espagnols et fondation de l'Eglise catho- que. Ruine de l'idolâtrie, déclin et abaissement la race indigène, jusqu'à la fin du xvi*e *siècle.*

In his introduction (p. lxxiv) Brasseur gives a st of the manuscript and printed books on hich he has mainly depended, the chief of hich are: Burgoa, Cogolludo, Torquemada, Sahagún, Remesal, Gomara (in Barcia), Lorenzana's *Cortes*, Bernal Diaz, Vetancurt's *Teatro Mexicano* (1698), Valades' *Rhetorica Christiana* (1579), Juarros, Pelaez, Leon y Gama, etc.

[5] Kirk's *Prescott*, i. 10. There are lists of Brasseur's works in his own *Bibliothèque Mex.-Guatémalienne*, p. 25; in the *Pinart Catalogue*, no. 141, etc.; Field, p. 43; Sabin, ii. 7420. Cf. notices of his labors by Haven in *Am. Antiq. Soc. Proc.*, Oct., 1870, p. 47; by Brinton in *Lippincott's Mag.*, i. 79. There is a *Sommaire des voyages scientifiques et des travaux de géographie, d'histoire, d'archéologie et de Philologie américaines, publiés par l'abbé Brasseur de Bourbourg* (St. Cloud, 1862).

[6] *Abor. Amer. Authors*, 57.

[7] Cf. Bandelier, *Am. Antiq. Soc. Proc.*, n. s., i. 93; Field, no. 176; H. H. Bancroft's *Nat. Races*, ii. 116, 780; v. 126, 153, 236, 241,—who says of Brasseur that "he rejects nothing, and transforms everything into historic fact;" but Bancroft looks to Brasseur for the main drift of his chapter on pre-Toltec history. Cf. Brinton's *Myths of the New World*, p. 41.

Amoxtli [etc.] (Paris, 1868), wherein he accounted as mere symbolism what he had earlier elucidated as historical records, and connected the recital of the *Codex Chimalpopoca* with the story of Atlantis, making that lost land the original seat of all old-world and new-world civilization, and finding in that sacred history of Colhuacan and Mexico the secret evidence of a mighty cataclysm that sunk the continent from Honduras (subsequently with Yucatan elevated) to perhaps the Canaries.[1] Two years later, in his elucidation of the *MS. Troano* (1869–70), this same theory governed all his study. Brasseur was quite aware of the loss of estimation which followed upon his erratic change of opinion, as the introduction to his *Bibl. Mex.-Guatémalienne* shows. No other French writer, however, has so associated his name with the history of these early peoples.[2]

In Mexico itself the earliest general narrative was not cast in the usual historical form but in the guise of a dialogue, held night after night, between a Spaniard and an Indian the ancient history of the country was recounted. The author, Joseph Joaquin Granados y Galvez, published it in 1778, as *Tardes Américanas: gobierno gentil y católico: breve y particular noticia de toda la historia Indiana: sucesos, casos notables, y cosas ignoradas desde la entrada de la Gran nacion Tulteca á esta tierra de Anahuac, hasta los presentes tiempos.*[3]

The most comprehensive grouping of historical material is in the *Diccionario Universal de historia y de Geografía* (Mexico, 1853–56),[4] of which Manuel Orozco y Berra was one of the chief collaborators. This last author has in two other works added very much to our knowledge of the racial and ancient history of the indigenous peoples. These are his *Geografía de las lenguas y Carta Etnográfica de México* (Mexico, 1864),[5] and his *Historia antigua y de la Conquista de México* (Mexico, 1880, in four volumes).[6] Perhaps the most important of all the Mexican publications is Manuel Larrainzar's *Estudios sobr la historia de América, sus ruinas y antigüedades, comparadas con lo más notable del otr Continente* (Mexico, 1875–1878, in five volumes).

In German the most important of recent books is Hermann Strebel's *Alt-Mexico* (Hamburg, 1885); but Waitz's *Amerikaner* (1864, vol. ii.) has a section on the Mexicans. Adolph Bastian's "Zur Geschichte des Alten Mexico" is contained in the second volume of hi *Culturländer des Alten America* (Berlin, 1878), in which he considers the subject of Quetzalcoatl, the religious ceremonial, administrative and social life, as well as the differen stocks of the native tribes.

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[1] Bancroft, *Nat. Races*, v. 176; Baldwin, *Anc. America.*

[2] Reference may be made to H. T. Moke's *Histoire des peuples Américains* (Bruxelles, 1847); Michel Chevalier's "Du Mexique avant et pendant la Conquête," in the *Revue des deux Mondes*, 1845, and his *Le Mexique ancien et moderne* (Paris, 1863); and some parts of the Marquis de Nadaillac's *L'Amérique préhistorique* (Paris, 1883). A recent popular summary, without references, of the condition and history of ancient Mexico, is Lucien Biart's *Les Aztèques, histoire, mœurs, coutumes* (Paris, 1885), of which there is an English translation, *The Aztecs, their history*, etc., translated by J. L. Garnier (Chicago, 1887).

[3] Leclerc, no. 1147; Field, no. 620; Squier, no. 427; Sabin, vii. 28,255; Bandelier in *Am Antiq. Soc. Proc.*, n. s., i. 116. It has never ye been reprinted. The early date, as well as it rarity, have contributed to give it, perhaps, undue reputation. It is worth from £3 to £4.

[4] Leclerc, no. 1119. See Vol. II. p. 415.

[5] Leclerc, no. 2079; Brasseur, *Bib. Mex.-Guat* p. 113.

[6] For the *Historia de Mexico* of Carbajal Espinosa, see Vol. II. p. 428. Cf. Alfred Chavero's *México á través de los Siglos.*

NOTES.

THE AUTHORITIES ON THE SO-CALLED CIVILIZATION OF ANCIENT MEXICO AND ADJACENT LANDS, AND THE INTERPRETATION OF SUCH AUTHORITIES.

HE ancient so-called civilization which the Spaniards found in Mexico and Central America is the subject nuch controversy: in the first place as regards its origin, whether indigenous, or allied to and derived from civilizations of the Old World; and in the second place as regards its character, whether it was something e than a kind of grotesque barbarism, or of a nature that makes even the Spanish culture, which supplanted nferior in some respects by comparison.[1] The first of these problems, as regards its origin, is considered nother place. As respects the second, or its character, it is proposed here to follow the history of opinions. n a book published at Seville in 1519, Martin Fernandez d'Enciso's *Suma de geographia que trata de todas partidas y provincias del mundo: en especial de las Indias*,[2] the European reader is supposed to have eived the earliest hints of the degree of civilization — if it be so termed — of which the succeeding Spanish ters made so much. A brief sentence was thus the shadowy beginning of the stories of grandeur and magcence[3] which we find later in Cortes, Bernal Diaz, Las Casas, Torquemada, Sahagún, Ramusio, Gomara, edo, Zurita, Tezozomoc, and Ixtlilxochitl, and which is repeated often with accumulating effect in Acosta, rera, Lorenzana, Solis, Clavigero, and their successors.[4] Bandelier[5] points out how Robertson, in his views Iexican civilization as in "the infancy of civil life,"[6] really opened the view for the first time of the exagted and uncritical estimates of the older writers, which Morgan has carried in our day to the highest h, and, as it would seem, without sufficient recognition of some of the contrary evidence.

t has usually been held that the creation among the Mexicans about thirty years after the founding of Mexof a chief-of-men (Tlacatecuhtli) instituted a feudal monarchy. Bandelier,[7] speaking of the application of lal terms by the old writers to Mexican institutions, says: "What in their first process of thinking was ely a comparative, became very soon a positive terminology for the purpose of describing institutions to ch this foreign terminology never was adapted." He instances that the so-called "king" of these early ers was a translation of the native term, which in fact only meant "one of those who spoke;" that is, a minent member of the council.[8] Bandelier traces the beginning of the feudal ideas as a graft upon the ve systems, in the oldest document issued by Europeans on Mexican soil, when Cortes (May 20, 1519) cond land on his allies, the chiefs of Axapusco and Tepeyahualco, and for the first time made their offices editary. It is Bandelier's opinion that "the grantees had no conception of the true import of what they pted; neither did Cortes conceive the nature of their ideas." This was followed after the Spanish occupa-

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Discrediting Gomara's statement that De Ayllon found es near Cape Hatteras who had tame deer and made se from their milk, Dr. Brinton says: "Throughout continent there is not a single authentic instance of a oral tribe, not one of an animal raised for its milk, nor the transportation of persons, and very few for their . It was essentially a hunting race." (*Myths of the World*, 21.) He adds: "The one mollifying elet was agriculture, substituting a sedentary for a wanderlife, supplying a fixed dependence for an uncertain conency."

See Vol. II. p. 98.

It was two years earlier, in 1517, that Hernandez de dova had first noticed the ruins of the Yucatan coast, gh Columbus, in 1502, near Yucatan had met a Maya el, which with its navigators had astonished him.

"No writer," says Bandelier (*Peabody Mus. Repts.* ii. , "has been more prolific in pictures of pomp, regal lth and magnificence, than Bernal Diaz. Most of the writers have placed undue reliance on his statements, ming that the truthfulness of his own individual feelings the result of cool observation. Any one who has read ntively his *Mémoirs* will become convinced that he is ct one of the most unreliable eye-witnesses, so far as eral principles are concerned. . . . Cortes had personal political motives to magnify and embellish the picture. is statements fall far below those of his troopers in lling and highly-colored details, there is every reason to eve that they are the more trustworthy. . . . In the deptions by Cortes we find, on the whole, nothing but a arous display common to other Indian celebrations of a ilar character."

andelier's further comment is (*Ibid.* ii. 397): "A feudal ire at Tezcuco was an invention of the chroniclers, who had a direct interest, or thought to have one, in advancing the claims of the Tezcucan tribe to an original supremacy."

Bandelier again (*Ibid.* ii. 385) points out the early statements of the conquerors, and of their annalists, which have prompted the inference of a feudal condition of society; but he refers to Ixtlilxochitl as "the chief originator of the feudal view;" and from him Torquemada draws his inspiration. Wilson (*Prehist. Man*, i. 242) holds much the same views.

[5] *Peabody Mus. Tenth Rept.* vol. ii. 114.

[6] Bandelier ("Art of War, etc.," in *Peabody Mus. Rept.* x. 113) again says of De Pauw's *Recherches philosophiques sur les Américaines*, that it is "a very injudicious book, which by its extravagance and audacity created a great deal of harm. It permitted Clavigero to attack even Robertson, because the latter had also applied sound criticism to the study of American aboriginal history, and by artfully placing both as upon the same platform, to counteract much of the good effects of Robertson's work."

[7] *Peabody Mus. Repts.* ii. 114.

[8] In regard to the nature of the chief-of-men we find, among much else of the first importance in the study of the Mexican government, an exposition in Sahagún (lib. vi. cap. 20), which seems to establish the elective and non-hereditary character of the office. It was "this office and its attributes," says Bandelier (*Peabody Mus. Repts.* ii. 670), "which have been the main stays of the notion that a high degree of civilization prevailed in aboriginal Mexico, in so far as its people were ruled after the manner of eastern despotisms." Bandelier (*Ibid.* ii. 133) says: "It is not impossible that the so-called empire of Mexico may yet prove to have been but a confederacy of the Nahuatlac tribe of the valley, with the Mexicans as military leaders." His argument on the word translated "king" is not convincing.

tion of Mexico by the institution of "repartimientos," through which the natives became serfs of the soil to the conquerors.[1]

The story about this unknown splendor of a strange civilization fascinated the world nearly half a century ago in the kindly recital of Prescott;[2] but it was observed that he quoted too often the somewhat illusory and exaggerated statements of Ixtlilxochitl, and was not a little attracted by the gorgeous pictures of Waldeck and Dupaix. With such a charming depicter, the barbaric gorgeousness of this ancient empire, as it became the fashion to call it, gathered a new interest, which has never waned, and Morgan[3] is probably correct in affirming that it "has called into existence a larger number of works than were ever before written upon any people of the same number and of the same importance."[4] Even those who, like Tylor, had gone to Mexico sceptics, had been forced to the conclusion that Prescott's pictures were substantially correct, and setting aside what he felt to be the monstrous exaggerations of Solis, Gomara, and the rest, he could not find the history much less trustworthy than European history of the same period.[5] It has been told in another place[6] how the derogatory view, as opposed to the views of Prescott, were expressed by R. A. Wilson in his *New Conquest of Mexico*, in assuming that all the conquerors said was baseless fabrication, the European Montezuma becoming a petty Indian chief, and the great city of Mexico a collection of hovels in an everglade, — the ruins of the country being accounted for by supposing them the relics of an ancient Phœnician civilization, which had been stamped out by the inroads of barbarians, whose equally barbarious descendants the Spaniards were in turn to overcome. It cannot be said that such iconoclastic opinions obtained any marked acceptance; but it was apparent that the notion of the exaggeration of the Spanish accounts was becoming sensibly fixed in the world's opinion. We see this reaction in a far less excessive way in Daniel Wilson's *Prehistoric Man* (i. 325, etc.), and he was struck, among other things, with the utter obliteration of the architectural traces of the conquered race in the city of Mexico itself.[7] When, in 1875, Hubert H. Bancroft published the second volume of his *Native Races*, he confessed "that much concerning the Aztec civilization had been greatly exaggerated by the old Spanish writers, and for obvious reasons;" but he contended that the stories of their magnificence must in the main be accepted, because of the unanimity of witnesses, notwithstanding their copying from one another, and because of the evidence of the ruins.[8] He strikes his key-note in his chapter on the "Government of the Nahua Nations," in speaking of it as "monarchical and nearly absolute;"[9] but it was perhaps in his chapter on the "Palaces and Households of the Nahua Kings," where he fortifies his statement by numerous references, that he carried his descriptions to the extent that allied his opinions to those who most unhesitatingly accepted the old stories.[10]

The most serious arraignment of these long-accepted views was by Lewis H. Morgan, who speaks of them as having "caught the imagination and overcome the critical judgment of Prescott, ravaged the sprightly brain of Brasseur de Bourbourg, and carried up in a whirlwind our author at the Golden Gate."[11]

Morgan's studies had been primarily among the Iroquois, and by analogy he had applied his reasoning to the aboriginal conditions of Mexico and Central America, thus degrading their so-called civilization to the level of the Indian tribal organization, as it was understood in the North.[12] Morgan's confidence in its deductions was perfect, and he was not very gracious in alluding to the views of his opponents. He looked upon "the fabric of Aztec romance as the most deadly encumbrance upon American ethnology."[13] The Spanish chroniclers, as he contended, "inaugurated American aboriginal history upon a misconception of Indian life, which has remained ɔstantially unquestioned till recently."[1] He charges upon ignorance of the structure and principles of Indian iety, the perversion of all the writers,[2] from Cortes to Bancroft, who, as he says, unable to comprehend its culiarities, invoked the imagination to supply whatever was necessary to fill out the picture.[3] The actual ıdition to which the Indians of Spanish America had reached was, according to his schedule, the upper status barbarism, between which and the beginning of civilization he reckoned an entire ethnical period. "In the of government they had not been able to rise above gentile institutions and establish political society. is fact," Morgan continues, "demonstrates the impossibility of privileged classes and of potentates, under ir institutions, with power to enforce the labor of the people for the erection of palaces for their use, and ɔlains the absence of such structures."[4]

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[1] *Peabody Mus. Repts.* ii. 435.

[2] Introd. to *Conquest of Mexico.* See Vol. II. p. 426. In the Appendix to his third volume, Prescott, relying mainly on the works of Dupaix and Waldeck, arrived at conclusions as respects the origin of the Mexican civilization, and its analogies with the Old World, which accord with those of Stephens, whose work had not appeared at the time when Prescott wrote.

[3] *Houses and House Life*, p. 222.

[4] Bancroft (ii. 92) says: "What is known of the Aztecs has furnished material for nine tenths of all that has been written on the American civilized nations in general."

[5] *Anahuac, or Mexico and the Mexicans, Ancient and Modern* (London, 1861). Tylor enlarges upon what he considers the evidences of immense populations; and respecting some of their arts he adds, from inspection of specimens of their handicraft, that "the Spanish conquerors were not romancing in the wonderful stories they told of the skill of the native goldsmiths." On the other hand, Morgan (*Houses and House Life*, 223) thinks the figures of population grossly exaggerated.

[6] Vol. II. p. 427.

[7] When we consider that Rome, Constantinople, and Jerusalem, in spite of rapine, siege and fire, still retain numerous traces of their earliest times, and that not a vestige of the Aztec capital remains to us except its site, we must assume, in Wilson's opinion (*Prehistoric Man*, i. 331), that its edifices and causeways must have been for the most part more slight and fragile than the descriptions of the conquerors implied. Morgan instances as a proof of the flimsy character of their masonry, that Cortes in seventeen days levelled three fourths of the city of Mexico. But, adds Wilson, "so far as an indigenous American civilization is concerned, no doubt can be entertained, and there is little room for questioning, that among races who had carried civilization so far, there existed the capacity for its further development, independently of all borrowed aid" (p. 336). The Baron Nordenskjöld informs me that there is in the library at Upsala a MS. map of Mexico by Santa Cruz (d. 15-2) which contains numerous ethnographical details, not to be found in printed maps of that day.

[8] *Native Races*, ii. 159.

[9] *Ibid.* ii. 133.

[10] Bancroft has recently epitomized his views afresh in the *Amer. Antiquarian*, Jan., 1888.

[11] Bancroft wrote in San Francisco, it will be remembered

[12] It was for Bandelier, in his "Social organization and mode of government of the ancient Mexicans" (*Peabody Mus. Repts.* ii. 557), to demonstrate the proposition that tribal society based, according to Morgan, upon kin, and not political society, which rests upon territory and property, must be looked for among the ancient Mexicans.

[13] Morgan's *Houses*, etc., 225. Bandelier (*Peabody Mus. Rept.*, vol. ii. 114) speaks of the views advanced by Morgan in his "Montezuma's Dinner," as "a bold stroke for the establishment of American ethnology on a new basis." I must be remembered that Bandelier was Morgan's pupil.

This is the essence of the variance of the two schools of interpretation of the Aztec and Maya life. The der of Bancroft will find, on the other hand, due recognition of an imperial system, with its monarch and ɔles and classes of slaves, and innumerable palaces, of which we see to-day the ruins. The studies of Banier are appealed to by Morgan as substantiating his view.[5] Mrs. Zelia Nuttall (*Proc. Am. Assoc. Adv. Sci.*, g., 1886) claims to be able to show that the true interpretation of the Borgian and other codices points in t at least to details of a communal life.

The special issues which for a test Morgan takes with Bancroft are in regard to the character of the house which Montezuma lived, and of the dinner which is represented by Bernal Diaz and the rest as the daily ıquet of an imperial potentate. Morgan's criticism is in his *Houses and House Life of the American Abo-ines* (Washington, 1881).[6] The basis of this book had been intended for a fifth Part of his *Ancient Society*, was not used in that publication. He printed the material, however, in papers on "Montezuma's Din-" (*No. Am. Rev.*, Ap. 1876), "Houses of the Moundbuilders" (*Ibid.*, July, 1876), and "Study of the Houses l House Life of the Indian Tribes" (*Archæol. Inst. of Amer. Publ.*). These papers amalgamated now ke the work called *Houses and House Life*.[7]

Morgan argues that a communal mode of living accords with the usages of aboriginal hospitality, as well as h their tenure of lands,[8] and with the large buildings, which others call palaces, and he calls joint tenement ıses. He instances, as evidence of the size of such houses, that at Cholula four hundred Spaniards and one usand allied Indians found lodging in such a house; and he points to Stephens's description of similar comnal establishments which he found in our day near Uxmal.[9] He holds that the inference of communal ng from such data as these is sufficient to warrant a belief in it, although none of the early Spanish writers ntion such communism as existing; while they actually describe a communal feast in what is known as ntezuma's dinner;[10] and while the plans of the large buildings now seen in ruins are exactly in accord with demands of separate families united in joint occupancy. In such groups, he holds, there is usually one build- devoted to the purpose of a Tecpan, or official house of the tribe.[11] Under the pressure to labor, which the

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Ibid. 222.

Morgan says of his predecessors, "they learned noth- and knew nothing" of Indian society.

Ibid. 223.

In this he of course assumes that the ruins in Spanish erica are of communal edifices.

Bandelier's papers are in the second volume of the *Re-ts of the Peabody Museum* at Cambridge. He contends ɪis "Art of Warfare among the Ancient Mexicans," that has shown the non-existence of a military despotism, proved their government to be "a military democracy, ginally based upon communism in living." A similar erstanding pervades his other essay "On the social or-ization and mode of government of the ancient Mexi-s." Morgan and Bandelier profess great admiration for h other, — Morgan citing his friend as "our most emi-t scholar in Spanish American history" (*Houses*, etc., and Bandelier expresses his deep feeling of gratitude, (*Archæolog. Tour*, 32). This affectionate relation has y likely done something in unifying their intellectual pathies. The *Ancient Society, or researches in the s of human progress from savagery through barbarism ivilization* (N. Y. 1877), of Morgan is reflected very pal-ly in these papers of Bandelier. The accounts of the of the conquest, as detailed in Bancroft's *Mexico* (vol. and the views of their war customs (*Native Races*, ii. 13), contrasted with Bandelier's ideas, — who finds in kman's books "the natural parallelism between the ys of the Iroquois and the so-called conquests of the xican confederacy" (*Archæol. Tour*, 32), and who re-es the battle of Otumba to an affair like that of Custer the Sioux (*Art of Warfare*), — give us in the military ects of the ancient life the opposed views of the two ools of interpreters

[6] Being vol. iv. of the *Contributions to No. Amer. Ethnol.* in Powell's *Survey of the Rocky Mt. Region.* Some of Morgan's cognate studies relating to the aboriginal system of consanguinity and laws of descent are in the *Smithsonian Contributions*, xvii., the *Smithsonian Misc. Coll.* ii., *Amer. Acad. Arts and Sci. Trans.* vii., and *Am. Assoc. Adv. Sci. Proc.*, 1857.

[7] Morgan in this, his last work, condenses in his first chapter those which were numbered 1 to 4 in his *Ancient Society*, and in succeeding sections he discusses the laws of hospitality, communism, usages of land and food, and the houses of the northern tribes, of those of New Mexico, San Juan River, the moundbuilders, the Aztecs, and those in Yucatan and Central America. Among these he finds three distinct ethnical stages, as shown in the northern Indian, higher in the sedentary tribes of New Mexico, and highest among those of Mexico and Central America. S. F. Haven commemorated Morgan's death in the *Am. Antiq. Soc. Proc.*, Apr., 1880.

[8] Cf. Bandelier on "the tenure of lands" in *Peabody Mus. Repts.* (1878), no. xi., and Bancroft in *Nat. Races*, ii. ch. 6, p. 223.

[9] Bandelier (*Peabody Mus. Repts.* ii. 391) points out that when Martin Ursúa captured Tayasál on Lake Petin, the last pueblo inhabited by Maya Indians, he found "all the inhabitants living brutally together, an entire relationship together in one single house," and Bandelier refers further to Morgan's *Ancient Society*, Part 2, p. 181.

[10] Bandelier (*Peabody Mus. Repts.* ii. 673) accepts the views of Morgan, calling it "a rude clannish feast," given by the official household of the tribe as a part of its daily duties and obligations.

[11] On the character of the Tecpan (council house, or official house) of the Mexicans, which the early writers trans-

Spaniards inflicted on their occupants, these communal dwellers were driven, to escape such servitude, into the forest, and thus their houses fell into decay. Morgan's views attracted the adhesion of not a few archæologists, like Bandelier and Dawson; but in Bancroft, as contravening the spirit of his *Native Races*, they begat feelings that substituted disdain for convincing arguments.[1] The less passionate controversialists point out, with more effect, how hazardous it is, in coming to conclusions on the quality of the Nahua, Maya, or Quiché conditions of life, to ignore such evidences as those of the hieroglyphics, the calendars, the architecture and carvings, the literature and the industries, as evincing quite another kind, rather than degree, of progress from that of the northern Indians.[2]

II. BIBLIOGRAPHICAL NOTES UPON THE RUINS AND ARCHÆOLOGICAL REMAINS OF MEXICO AND CENTRAL AMERICA.

Elsewhere in this work some account is given of the comprehensive treatment of American antiquities. I is the purpose of this note to characterize such other descriptions as have been specially confined to th antiquities of Mexico, Central America, and adjacent parts; together with noting occasionally those mor comprehensive works which have sections on these regions. The earliest and most distinguished of all suc treatises are the writings of Alexander von Humboldt,[3] to whom may be ascribed the paternity of what th French define as the Science of Americanism, which, however, took more definite shape and invited disciple ship when the Société Américaine de France was formed, and Aubin in his *Mémoire sur la peinture didac tique et l'écriture figurative des Anciens Méxicains* furnished a standard of scholarship. How new thi science was may be deduced from the fact that Robertson, the most distinguished authority on early America history, who wrote in English, in the last part of the preceding century, had ventured to say that in all Ne Spain there was not "a single monument or vestige of any building more ancient than the Conquest." Afte Humboldt, the most famous of what may be called the pioneers of this art were Kingsborough, Dupaix, an Waldeck, whose publications are sufficiently described elsewhere. The most startling developments came fro the expeditions of Stephens and Catherwood, the former mingling both in his *Central America* and *Yucata* the charms of a personal narrative with his archæological studies, while the draughtsman, beside furnishing th sketches for Stephens's book, embodied his drawings on a larger scale in the publication which passes unde his own name.[4] The explorations of Charnay are those which have excited the most interest of late year though equally significant results have been produced by such special explorers as Squier in Nicaragua, L Plongeon in Yucatan, and Bandelier in Mexico.

The labors of the French archæologist, which began in 1858, resulted in the work *Cités et ruines Amér*

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late "palace," with its sense of magnificence, see Bandelier (*Peabody Mus. Repts.* ii. 406, 671, etc.), with his references. Morgan holds that Stephens is largely responsible for the prevalence of erroneous notions regarding the Mayas, by reason of using the words "palaces" and "great cities" for defining what were really the pueblos of these southern Indians. Bancroft (ii. 84), referring to the ruins, says: They have "the highest value as confirming the truth of the reports made by Spanish writers, very many, or perhaps most, of whose statements respecting the wonderful phenomena of the New World, without this incontrovertible material proof, would find few believers among the skeptical students of the present day." Bancroft had little prescience respecting what the communal theorists were going to say of these ruins.

[1] Cf. Bancroft's *Cent. America*, i. 317. Sir J. William Dawson, in his *Fossil Men* (p. 83), contends that Morgan has proved his point, and he calls the ruins of Spanish America "communistic barracks" (p. 50). Higginson, in the first chapter of his *Larger History*, which is a very excellent, condensed popular statement of the new views which Morgan inaugurated, says of him very truly, that he lacked moderation, and that there is "something almost exasperating in the positiveness with which he sometimes assumes as proved that which is only probable."

[2] Bancroft in his footnotes (vol. ii.) embodies the best bibliography of this ancient civilization. Cf. Wilson's *Prehistoric Man*, i. ch. 14; C. Hermann Berendt's "Centres of ancient civilization and their geographical distribution," an *Address before the Amer. Geog. Soc.* (N. Y. 1876); Draper's *Intellectual Development of Europe*; Brasseur's *Ms. Troano*; Humboldt's *Cosmos* (English transl. ii. 674); Michel Chevalier in the *Revue de deux Mondes*, Mar.-July, 1845, embraced later in his *Du Mèxique avant et pendant la Conquête* (Paris, 1845); Brantz Mayer's *Mexico as it was*; *The Galaxy*, March, 1876; *Scribner's Mag.* v. 724; *Overland Monthly*, xiv. 468; De Charency's *Hist. du C vilisation du Mèxique* (*Revue des Questions historiques* vi. 283; Dabry de Thiersant's *Origine des indiens du No veau Monde* (Paris, 1883); Peschel's *Races of Men*, 441 Nadaillac's *Les premiers hommes et les temps préhist riques*, ii. ch. 9, etc.

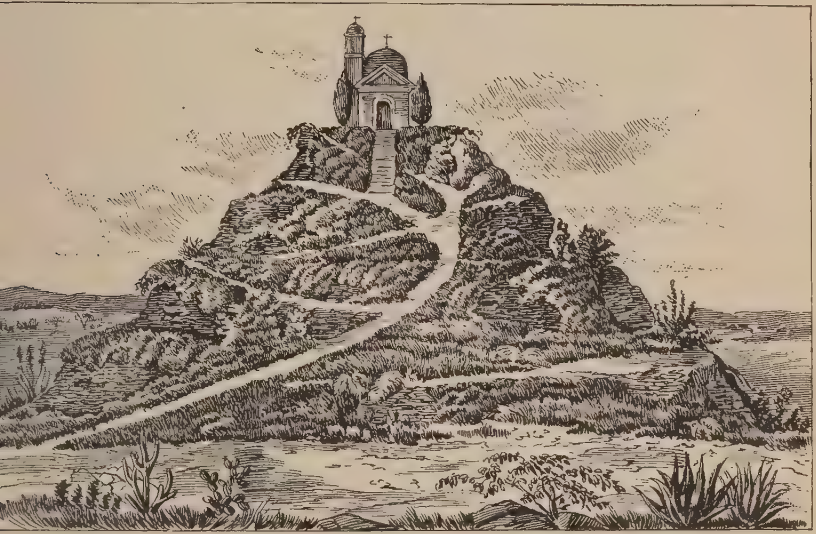
[3] For the bibliography of his works see Brunet, Sabi Field, etc. The octavo edition of his *Vues* has 19 of th 69 plates which constitute the *Atlas* of the large editio See the chapter on Peru for further detail.

[4] John Lloyd Stephens, *Incidents of travel in Centr America, Chiapas, and Yucatan*, Lond. and N. Y 184 — various later eds., that of London, 1854, being "revis from the latest Amer. ed., with additions by Frederic Catherwood." Stephens started on this expedition 1839, and he was armed with credentials from Preside Van Buren. He travelled 3000 miles, and visited eig ruined cities, as shown by his route given on the map vol. i. Cf. references in Allibone, ii. p. 2240; *Poole's I dex*, p. 212; his *Incidents of Travel in Yucatan* will mentioned later.

Frederick Catherwood's *Views of Ancient Monume in Central America, Chiapas, and Yucatan* (Lond. 184 has a brief text (pp. 24) and 25 lithographed plates. So of the original drawings used in making these plates we included in the *Squier Catalogue*, p. 229. (Sabin's *Di* iii. no. 11520.) Captain Lindesay Brine, in his paper the "Ruined Cities of Central America" (*Journal Ro Geog. Soc.* 1872, p. 354; *Proc.* xvii. 67), testifies to t accuracy of Stephens and Catherwood. These new dev opments furnished the material for numerous purveyors the popular mind, some of them of the slightest value, li Asahel Davis, whose *Antiquities of Central Ameri* with some slight changes of title, and with the parade new editions, were common enough between 1840 a 1850.

ines: Mitla, Palenqué, Izamal, Chichen-Itza, Uxmal, recueillies et photographiées par Désiré Charnay, vec un Texte par M. Viollet le Duc. (Paris, 1863.) Charnay contributed to this joint publication, beside ie photographs, a paper called "Le Mexique, 1858–61, — souvenirs et impressions de Voyage." The Ar-iitect Viollet le Duc gives us in the same book an essay by an active, well-equipped, and ingenious mind, it his speculations about the origin of this Southern civilization and its remains are rather curious than con-ncing.[1]

The public began to learn better what Charnay's full and hearty confidence in his own sweeping assertions as, when he again entered the field in a series of papers on the ruins of Central America which he contributed 879–81) to the *North American Review* (vols. cxxxi.–cxxxiii.), and which for the most part reached the ublic newly dressed in some of the papers contributed by L. P. Gratacap to the *American Antiquarian*,[2] id in a paper by F. A. Ober on "The Ancient Cities of America," in the *Amer. Geog. Soc. Bulletin*, Mar., 388. Charnay took moulds of various sculptures found among the ruins, which were placed in the Trocadero luseum in Paris.[3] What Charnay communicated in English to the *No. Amer. Review* appeared in better iape in French in the *Tour du Monde* (1886-87), and in a still riper condition in his latest work, *Les anciens illes du Nouveau Monde: voyages d'explorations au Méxique et dans l'Amérique Centrale. 1857–1882. uvrage contenant 214 gravures et 19 cartes ou plans.* (Paris, 1885.)[4]



THE PYRAMID OF CHOLULA.*

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[1] Viollet le Duc, in his *Histoire de l'habitation humaine ·puis les temps préhistoriques* (Paris, 1875), has given a iapter (no. xxii.) to the "Nahuas and Toltecs." Views ore or less studied, comprehensive, and restricted are ven in R. Cary Long's *Ancient Architecture of America, s historic value and parallelism of development with the rchitecture of the Old World* (N. Y. 1849), an address om the *N. Y. Hist. Soc. Proc.* 1849, p. 117; R. P. Greg i "the Fret or Key Ornament in Mexico and Peru," in ie *Archæologia* (London), vol. xlvii. 157; and a popular immary on "the pyramid in America," by S. D. Peet, in ie *American Antiquarian*, July, 1888, comparing the ounds of Cholula, Uxmal, Palenqué, Teotihuacan, Co-an, Quemada, Cohokia, St. Louis, etc. John T. Short immarizes the characteristics of the Nahua and Maya yles (*No. Amer. of Antiquity*, 340, 359). There are chap-rs on their architecture in Bancroft, *Nat. Races*, ii.; but ie references in his vol. iv. are most helpful.

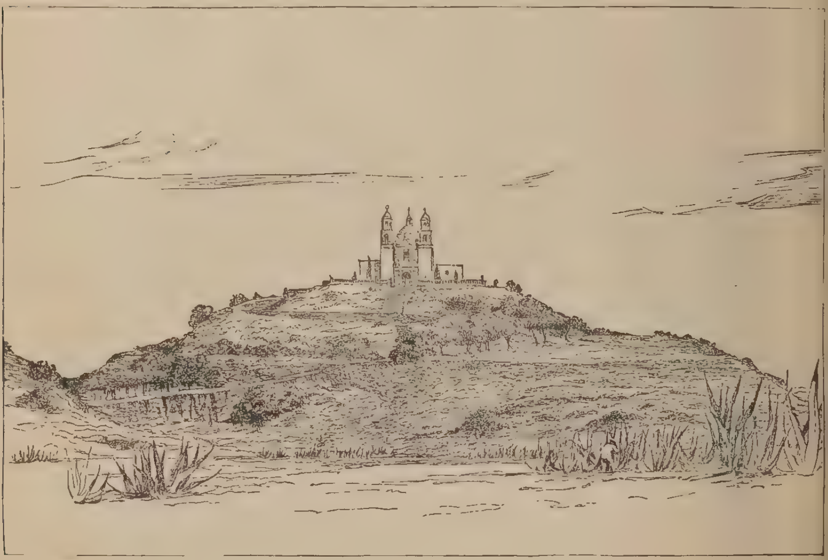
[2] Vols. v. vi. vii. on "Ancient Mexican Civilization," "Pyramid of Teotihuacan," "Sacrificial Calendar Stone," "Central America at time of Conquest," "Ruins at Palenque and Copan," "Ruins of Uxmal," etc.

[3] Duplicates were placed in the Nat. Museum at Washington by the liberality of Pierre Lorillard.

[4] The English translation is condensed in parts: *The ancient cities of the New World: being travels and explorations in Mexico and Central America from 1857–1882. Translated from the French by J. Gonino and Helen S. Conant.* (London, 1887.) Some of his notable results were the discovery of stucco ornaments in the province of Iturbide, among ruins which he unfortunately named Lorillard City (Eng. tr. ch. 22). The palace at Tula is also figured in Brocklehurst's *Mexico to-day*, ch. 25. The discovery of what Charnay calls glass and porcelain is looked upon as doubtful by most archæologists, who believe the specimens to be rather traces of Spanish contact.

* After a drawing in Cumplido's Spanish translation of Prescott's *Mexico*, vol. iii. (Mexico, 1846.)

We proceed now to note geographically some of the principal ruins. In the vicinity of Vera Cruz the pyramid of Papantla is the conspicuous monument,[1] but there is little else thereabouts needing particular mention. Among the ruins of the central plateau of Mexico, the famous pyramid of Cholula is best known. The time of its construction is a matter about which archæologists are not agreed, though it is perhaps to be connected with the earliest period of the Nahua power. Duran, on the other hand, has told a story of its erection by the giants, overcome by the Nahuas.[2] Its purpose is equally debatable, whether intended for a memorial, a refuge, a defence, or a spot of worship — very likely the truth may be divided among them all.[3] It is a similar problem for divided opinion whether it was built by a great display of human energy, in accordance with the tradition that the bricks which composed its surface were passed from hand to hand by a line of men, extending to the spot where they were made leagues away, or constructed by a slower process of accretion, spread over successive generations, which might not have required any marvellous array of workmen.[4] The fierce conflict which — as some hold — Cortés had with the natives around the mound and on its slopes settled its fate; and the demolition begun thereupon, and continued by the furious desolaters of the Church, has been aided by the erosions of time and the hand of progress, till the great monument has become a ragged and corroded hill, which might to the casual observer stand for the natural base, given by the Creator, to the modern



GREAT MOUND OF CHOLULA.*

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[1] Bancroft, iv. 453, and references.

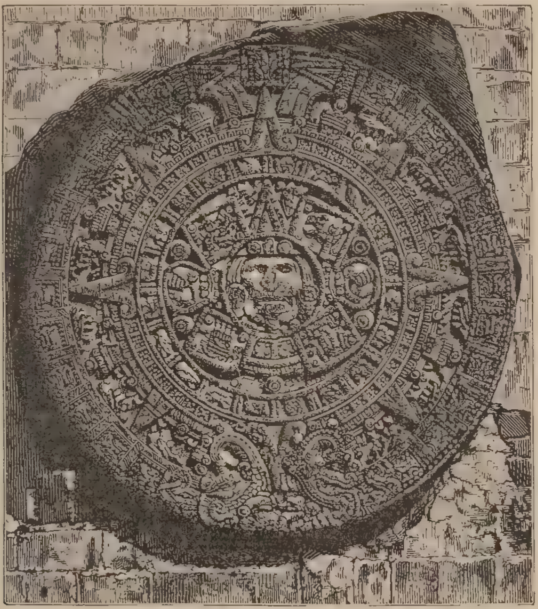
[2] Bandelier (p. 235) is confident that it was built by an earlier people than the Nahuas.

[3] Cf. Bandelier, p. 247. Short, p. 236.

[4] Bancroft (v. 200) gives references on these points, and particular note may be taken of Veytia, i. 18, 155, 199; and Brasseur, *Hist. Nations Civ.* iv. 182. Cf. also Nadaillac, p. 351. Bandelier (*Archæolog. Tour*, 248, 249) favors the gradual growth theory, and collates early sources (p. 250). Bancroft (iv. 474) holds that we may feel very sure its erection dates back of the tenth, and perhaps of the seventh, century.

* After a sketch in Bandelier's *Archæological Tour*, p. 233, who also gives a plan of the mound. The modern Church of Nuestra Señora de los Remedios is on the summit, where there are no traces of aboriginal works. A paved road leads to the top. A suburban road skirts its base, and fields of maguey surround it. The circuit of the base is 3859 feet, and the mound covers nearly twenty acres. Estimates of its height are variously given from 165 to 208 feet, according as one or another base line is chosen. It is built of adobe brick laid in clay, and it has suffered from erosion, slides, and other effects of time. There are some traces of steps up the side. Bandelier (pl. xv.) also gives a fac-simile of an old map of Cholula. The earliest picture which we have of the mound, evidently thought by the first Spaniards to be a natural one, is in the arms of Cholula (1540). There are other modern cuts in Carbajal-Espinosa's *Mexico* (i. 195); *Archæologia Americana* (i. 12); Brocklehurst's *Mexico to-day*, 182. The degree of restoration which draughtsmen allow to themselves, accounts in large measure for the great diversity of appearance which the mound makes in the different drawings of it. There is a professed restoration by Mothes in Armin's *Heutige Mexico*, 63, 68, 72. The engraving in Humboldt is really a restoration (*Vues*, etc., pl. vii., or pl. viii. of the folio ed.). Bandelier gives a slight sketch of a restoration (p 246, pl. viii.).

pel that now crowns its summit; but if Bandelier's view (p. 249) is correct, that none of the conquerors
ntion it, then the conflict which is recorded took place, not here, but on the vanished mound of Quetzal-



MEXICAN CALENDAR STONE.*

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* After a cut in *Harper's Magazine.* An enlarged engraving of the central head is given on the title-page of the pres-
t volume. A photographic reproduction, as the "Stone of the Sun," is given in Bandelier's *Archæological Tour*, p 54,
ere he summarizes the history of it, with references, including a paper by Alfredo Chavero, in the *Anales del Museo
cional de México*, and another, with a cut, by P. J. J. Valentini, in *Amer. Antiq. Soc. Proc.*, April, 1878, and in
e Nation, Aug. 8 and Sept. 19, 1878. Chavero's explanation is translated in Brocklehurst's *Mexico to-day*, p. 186.
e stone is dated in a year corresponding to A. D. 1479, and it was early described in Duran's *Historia de las Indias*,
d in Tezozomoc's *Crónica mexicana.* Tylor (*Anahuac*, 238) says that of the drawings made before the days of pho-
graphy, that in Carlos Nebel's *Viaje pintoresco y Arqueológico sobre la República Mejicana*, 1829–1834 (Paris, 1839),
the best, while the engravings given by Humboldt (pl. xxiii.) and others are more or less erroneous. Cf. other cuts in
rbajal's *México*, i. 528; Bustamante's *Mañanas de la Alameda* (Mexico, 1835–36); Short's *No. Amer. of Antiq.*, 408,
, with references; Bancroft's *Native Races*, ii. 520; iv. 506; Stevens's *Flint Chips*, 309.

Various calendar disks are figured in Clavigero (Casena, 1780); a colored calendar on agave paper is reproduced in the
rchives de la Commission Scientifique du Mèxique, iii. 120. (Quaritch held the original document in Aug., 1888, at
5, which had belonged to M. Boban.)

For elucidations of the Mexican astronomical and calendar system see Acosta, vi. cap. 2; Granados y Galvez's *Tardes
nericanas* (1778); Humboldt's essay in connection with pl. xxiii. of his *Atlas;* Prescott's *Mexico*, i. 117; Bollaert in
emoirs read before the Anthropol. Soc. of London, i. 210; E. G. Squier's *Some new discoveries respecting the dates
the great calendar stone of the ancient Mexicans, with observations on the Mexican cycle of fifty-two years*, in the
nerican Journal of Science and Arts, 2d ser., March, 1849, pp. 153–157; Abbé J. Pipart's *Astronomie, Chronologie
rites des Méxicaines* in the *Archives de la Soc. Amér. de France* (n. ser. i.); Brasseur's *Nat. Civ.*, iii. livre ii.;
ncroft's *Nat. Races*, ii. ch. 16; Short, ch. 9, with ref., p. 445; Cyrus Thomas in Powell's *Rept. Ethn. Bureau*, iii. 7.
Brinton's *Abor. Amer. Authors*, p. 38; Brasseur's "Chronologie historique des Méxicaines" in the *Actes de la Soc.
Ethnographie* (1872), vol. vi.; Wilson's *Prehistoric Man*, i. 355, for the Toltecs as the source of astronomical ideas,
h which compare Bancroft, v. 192; the *Bulletin de la Soc. royale Belge de Géog.*, Sept., Oct., 1886; and Bandelier
the *Peabody Mus. Repts.*, ii. 572, for a comparison of calendars.

Wilson in his *Prehistoric Man* (i. 246) says: "By the unaided results of native science, the dwellers on the Mexican
teau had effected an adjustment of civil to solar time so nearly correct that when the Spaniards landed on their coast,
ir own reckoning, according to the unreformed Julian calendar, was really eleven days in error, compared with that of
barbarian nation whose civilization they so speedily effaced."

See what Wilson (*Prehistoric Man*, i. 333) says of the native veneration for this calendar stone, when it was exhumed.
rs. Nuttall (*Proc. Am. Asso. Adv. Sci.*, Aug., 1886) claims to be able to show that this monolith is really a stone which
od in the Mexican market-place, and was used in regulating the stated market-days.

coatl, which in Bandelier's opinion was a different structure from this more famous mound, while other writers pronounce it the shrine itself of Quetzalcoatl.[1]

We have reference to a Cholula mound in some of the earliest writers. Bernal Diaz counted the steps on its side.[2] Motolinía saw it within ten years of the Conquest, when it was overgrown and much ruined. Sahagún says it was built for defensive purposes. Rojas, in his *Relacion de Cholula*, 1581, calls it a fortress, and says the Spaniards levelled its convex top to plant there a cross, where later, in 1594, they built a chapel. Torquemada, following Motolinía and the later Mendieta, says it was never finished, and was decayed in his time, though he traced the different levels. Its interest as a relic thus dates almost from the beginnings of the modern history of the region. Boturini mentions its four terraces. Clavigero, in 1744, rode up its sides on horseback, impelled by curiosity, and found it hard work even then to look upon it as other than a natural hill.[3] The earliest of the critical accounts of it, however, is Humboldt's, made from examinations in 1803, when much more than now of its original construction was observable, and his account is the one from which most travellers have drawn, — the result of close scrutiny in his text and of considerable license in his plate, in which he aimed at something like a restoration.[4] The latest critical examination is in Bandelier's "Studies about Cholula and its vicinity," making part iii. of his *Archæological Tour in Mexico in 1881*.[5]

What are called the finest ruins in Mexico are those of Xochicalco, seventy-five miles southwest of the capital, consisting of a mound of five terraces supported by masonry, with a walled area on the summit. Of late years a cornfield surrounds what is left of the pyramidal structure, which was its crowning edifice, and which up to the middle of the last century had five receding stories, though only one now appears. It owes its destruction to the needs which the proprietors of the neighboring sugar-works have had for its stones. The earliest account of the ruins appeared in the "Descripcion (1791) de los antiqüedades de Xochicalco" of José Antonio Alzate y Ramirez, in the *Gacetas de Literatura* (Mexico, 1790–94, in 3 vols.; reprinted Puebla, 1831, in 4 vols.), accompanied by plates, which were again used in Pietro Marquez's *Due Antichi Monumenti de Architettura Messicana* (Roma, 1804),[6] with an Italian version of Alzate, from which the French translation in

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[1] Bandelier's idea (p. 254) is that as the Indians never repair a ruin, they abandoned this remaining mound after its disaster, and transplanted the worship of Quetzalcoatl to the new mound, since destroyed, while the old shrine was in time given to the new cult of the Rain-god.

[2] As Bancroft thinks; but Bandelier says that it was not of this mound, but of the temple which stood where the modern convent stands, that this count was made. *Arch. Tour*, 242.

[3] *Storia Ant. del Messico*, ii. 33.

[4] *Vues*, i. 96; pl. iii., or pl. vii., viii. in folio ed.; *Essai polit.*, 239. The later observers are: Dupaix (*Antiq. Mex.*, and in Kingsborough, v. 218; with iv. pl. viii.). Bancroft remarks on the totally different aspects of Castañeda's two drawings. Nebel, in his *Viaje pintoresco y Arqueolójico sobre la república Mejicana*, 1829–34 (Paris, 1839, folio), gave a description and a large colored drawing. Of the other visitors whose accounts add something to our knowledge, Bancroft (iv. 471) notes the following: J. R. Poinsett, *Notes on Mexico* (London, 1825). W. H. Bullock, *Six Months in Mexico* (Lond., 1825). H. G. Ward, *Mexico in 1827* (Lond., 1828). Mark Beaufoy, *Mex. Illustrations* (Lond., 1828), with cuts. Charles Jos. Latrobe, *Rambles in Mexico* (Lond., 1836). Brantz Mayer, *Mexico as it was* (N. Y., 1854); *Mexico, Aztec, etc.* (Hartford, 1853); and in Schoolcraft, *Ind. Tribes*, vi. 582. Waddy Thompson, *Recoll. of Mexico* (N. Y., 1847). E. B. Tylor, *Anahuac* (Lond., 1861), p. 274. A. S. Evans, *Our Sister Republic* (Hartford, 1870). Summaries later than Bancroft's will be found in Short, p. 369, and Nadaillac, p. 350. Bancroft adds (iv. 471–2) a long list of second-hand describers.

[5] It is illustrated with a map of the district of Cholulá (p. 158), a detailed plan of the pyramid or mound (Humboldt is responsible for the former term) as it stands amid roads and fields (p. 230), and a fac-simile of an old map of the pueblo of Cholula (1581).

Bandelier speaks of the conservative tendencies of the native population of this region, giving a report that old native idols are still preserved and worshipped in caves, to which he could not induce the Indians to conduct him (p. 156); and that when he went to see the *Mapa de Cuauhtlantzinco*, or some native pictures of the 16th century, representing the Conquest, and of the highest importance for its history, he was jealously allowed but one glance at them, and could not get another (*Archæol. Tour*, p. 123). He adds: "The difficulty attending the consultation of any documents in the hands of Indians is universal, and results from their superstitious regard for writings on paper. The bulk of the people watch with the utmost jealousy over their old papers . . . They have a fear lest the power vested in an original may be transferred to a copy" (pp. 155–6).

[6] Pinart, no. 590.

NOTE. — The opposite view of the court of the Museum is from Charnay, p. 57. He says: "The Museum cannot be called rich, in so far that there is nothing remarkable in what the visitor is allowed to see." The vases, which had so much deceived Charnay, earlier, as to cause him to make casts of them for the Paris Museum, he at a later day pronounced forgeries; and he says that they, with many others which are seen in public and private museums, were manufactured at Tlatiloco, a Mexican suburb, between 1820 and 1828. See Holmes on the trade in Mexican spurious relics in *Science*, 1886.

The reclining statue in the foreground is balanced by one similar to it at an opposite part of the court-yard. One is the Chac-mool, as Le Plongeon called it, unearthed by him at Chichen-Itza, and appropriated by the Mexican government; the other was discovered at Tlaxcala.

The round stone in the centre is the sacrificial stone dug up in the great square in Mexico, of which an enlarged view is given on another page.

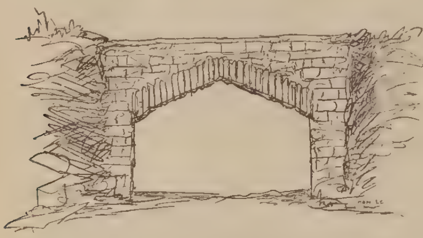
The museum is described in Bancroft, iv. 554; in Mayer's *Mexico as it was*, etc., and his *Mexico, Aztec, etc.*; Fossey's *Mexique*.

On Le Plongeon's discovery of the Chac-mool see *Amer. Antiq. Soc. Proc.*, Apr., 1877; Oct., 1878, and new series, i. 280; Nadaillac, Eng. tr., 346; Short, 400; Le Plongeon's *Sacred Mysteries*, 88, and his paper in the *Amer. Geog. Soc. Journal*, ix. 142 (1877). Hamy calls it the Toltec god Tlaloc, the rain-god; and Charnay agrees with him, giving (pp. 366–7) cuts of his and of the one found at Tlaxcala.

Dupaix was made. Alzate furnished the basis of the account in Humboldt's *Vues* (i. 129; pl. ix. of folio ed.) and Waldeck (*Voyage pitt.*, 69) regrets that Humboldt adopted so inexact a description as that of Alzate From Nebel (*Viage pintoresco*) we get our best graphic representations, for Tylor (*Anahuac*) says that Casteñeda's drawings, accompanying Dupaix, are very incorrect. Bancroft says that one, at least, of these drawings in Kingsborough bears not the slightest resemblance to the one given in Dupaix. In 1835 there wer explorations made under orders of the Mexican government, which were published in the *Revista Mexican* (i. 539, — reprinted in the *Diccionario Universal*, x. 938). Other accounts, more or less helpful, are given b Latrobe, Mayer,[1] and in Isador Löwenstern's *Le Méxique* (Paris, 1843).[2]

The ancient Anahuac corresponds mainly to the valley of Mexico city.[3] Bancroft (iv. 497) shows in summary way the extent of our knowledge of the scant archæological remains within this central area.[4]

In the city of Mexico not a single relic of the architecture of the earlier peoples remains,[5] though a few movable sculptured objects are preserved.[6]


OLD MEXICAN BRIDGE NEAR TEZCUCO.*

Tezcuco, on the other side of the lake from Mexico, affords some traces of the ante-Conquest architecture, but has revealed no such interesting movable relics as have been found in the capital city.[7] Twenty-five miles north of Mexico are the ruins of Teotihuacan, which have been abundantly described by early writers and modern explorers Bancroft (iv. 530) makes up his summary mainly from a Mexican official account, Ramon Almaraz's *Memoria de los trabajos ejecutados por la comision cientifica de Pachuca* (Mexico, 1865), adding what was needed to fill out details from Clavigero, Humboldt, and the later writers.[8]

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[1] He repeats Alzate's plate of the restoration of the ruins.

[2] Bancroft refers (iv. 483) to various compiled accounts, to which may be added his own and Short's (p. 371). Cf. F. Boncourt in the *Revue d'Ethnographie* (1887).

[3] Prescott, Kirk ed., i. 12. See the map of the plateau of Anahuac in Ruge, *Gesch. des Zeitalters der Entdeck.*, i. 363.

[4] Cf. Gros in the *Archives de la Com. Scient. du Mèxique*, vol. i.; H. de Saussure on the *Découverte des ruines d'une ancienne ville Mèxicaine situèe sur le plateau de l'Anahuac* (Paris, 1858, — *Bull. Soc Géog. de Paris*).

[5] The same is true of the earliest Spanish buildings. Icazbalceta (*México en 1554*, p. 74) says that the soil is constantly accumulating, and the whole city gradually sinks.

[6] Bancroft (iv. 505, 516, with references) says that such objects, when brought to light by excavations, have not always been removed from their hiding-places; and he argues that beneath the city there may yet be "thousands of interesting monuments." Cf. B. Mayer's *Mexico as it was*, vol. ii.

Bandelier (*Archæol. Tour*, Part ii. p. 49) gives us valuable "Archæological Notes about the City of Mexico," in which he says that Alfredo Chavero owns a very large oil painting, said to have been executed in 1523, giving a view of the aboriginal city and the principal events of the Conquest. It shows that the ancient city was about one quarter the size of the modern town.

We find descriptions of the city before the conquerors transformed it, in Brasseur's *Hist. Nations Civ.* iii. 187; iv. line 13; and in Bancroft (ii. ch. 18) there is a collation of authorities on Nahua buildings, with specific references on the city of Mexico (ii. p. 567). Bandelier describes with citations its military aspects at the time of the Conquest (*Peabody Mus. Reports*, x. 151).

The movable relics found in Mexico are the following: —

1. The calendar stone. See annexed cut.
2. Teoyamique. See cut in the appendix of this volume.
3. Sacrificial stone. See annexed cut.
4. Indio triste. See annexed cut.
5. Head of a serpent, discovered in 1881. Cf. Bandelier's *Archæol. Tour*, p. 69.
6. Human head. Cf. Bancroft, iv. 518. All of the above, except the calendar stone, are in the Museo Nacional.
7. Gladiatorial stone, discovered in 1792, but left buried. Cf. B. Mayer's *Mexico*, 123; Bancroft, iv. 516; Kingsborough, vii. 94; Sahagún, lib. ii.
8. A few other less important objects. Cf. Bandelier, *Archæol. Tour*, 52.

Antonio de Leon y Gama, who unfortunately had no knowledge of the writings of Sahagún, has discussed most of these relics in his *Descripcion histórico y Cronológico de las dos Piedras &c.* (2d ed. Bustamante, 1832.)

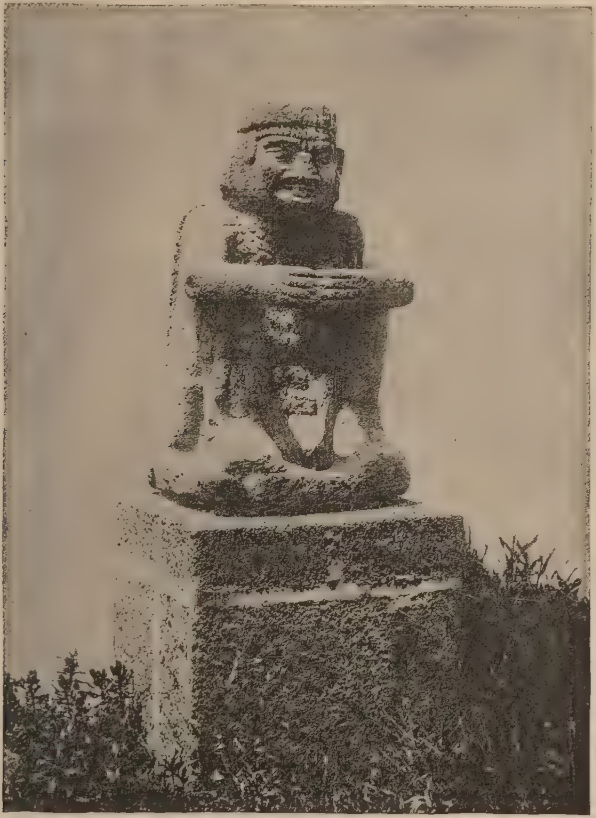
[7] Bancroft, iv. 520, with authorities, p. 523. Cf. *American Antiquarian*, May, 1888.

[8] Bancroft's numerous references make a foot-note (iv. 530). He adds a plan from Almaraz, and says that the description of Linares (*Soc. Mex. Geog. Boletin*, 30, i. 103) is mainly drawn from Almaraz. It is believed, but not absolutely proven, that the mounds were natural ones, artificially shaped (Bandelier, 44). The extent of the ruins is very great, and it is a current belief that the city in its prime must have been very large. The whole region is exceptionally rich in fragmentary and small relics, like pottery, obsidian implements, and terra-cotta heads. Cf. for these last, *Lond. Geog. Soc. Journal*, vii. 10; Thompson's *Mexico*, 140; Nebel, *Viaje*; Mayer's *Mexico as it was*, 227 (as cited in Bancroft, iv. 542); and later publications like T. U. Brocklehurst's *Mexico to-day* (Lond., 1883), and Zelia Nuttall's "Terra Cotta Heads from Teotihuacan," in the *Amer. Journal of Archæology* (June and Sept. 1886), ii. 157, 318.

Bancroft judges that the ruins date back to the sixth century, and says that these mounds served for models of the Aztec teocallis. On the commission already referred to was Antonio García y Cubas, who conducted some personal explorations, and in describing these in a separate publica-

* After a sketch in Tylor's *Anahuac*, who thinks it the original *Puente de las Bergantinas*, where Cortes had his brigantines launched. The span is about 20 feet, and this Tylor thinks "an immense span for such a construction." Cf H. H. Bancroft, *Native Races*, iv. 479, 528. Bandelier (*Peabody Mus. Reports*, ii. 696) doubts its antiquity.

Bancroft (iv. ch. 10), in describing what is known of the remains in the northern parts of Mexico, gives a ummary of what has been written regarding the most famous of these ruins, Quemada in Zacatecas.[1]



THE INDIO TRISTE.*

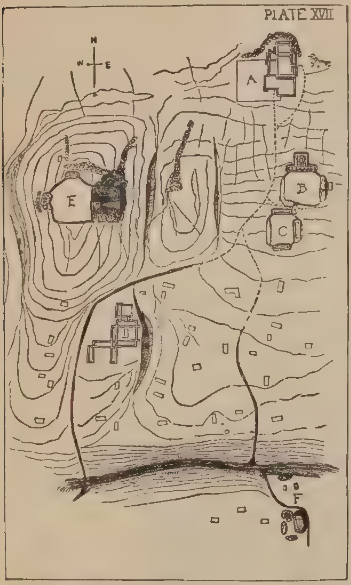
ion, *Ensayo de un Estudio Comparativo entre las Pirámides Egipcias y Mexicanas* (Mexico, 1871), he points out certain analogies of the American and Egyptian structures, which will be found in epitome in Bancroft (iv. 543). In discussing the monoliths of the ruins, Amos W. Butler *Amer. Antiquarian,* May, 1885), in a paper on "The Sacrificial Stone of San Juan Teotihuacan," advanced some views that are controverted by W. H. Holmes in the *Amer. Journal of Archæology* (i. 361), from whose footnotes a good bibliography of the subject can be derived. Bandelier (*Archæol. Tour,* 42) thinks that because no specific mention is made of them in Mexican tradition, it is safe to infer that these monuments antedate the Mexicans, and were in ruins at the time of the Conquest.

[1] The early writers make little mention of the place except as one of the halting-places of the Aztec migration. Torquemada has something to say (quoted in *Soc. Mex. Geog. Bol.,* 2°, iii. 278, with the earliest of the modern accounts by Manuel Gutierrez, in 1805). Capt. G. F. Lyon (*Journal of a residence and tour in Mexico,* London, 1828) visited the ruins in 1828. Pedro Rivera in 1830 described them in Márcos de Esparza's *Informe presentado al Gobierno* (Zacatecas, 1830, — also in *Museo Méxicano,* i. 185, 1843). The plan in Nebel's *Viaje* (copied in Bancroft, iv. 582) was made for Governor García, by Berghes, a German engineer, in 1831, who at the time was accompanied by J. Burkart (*Aufenthalt und Reisen in Mexico,* Stuttgart, 1836), who gives a plan of fewer details. Bancroft (iv. 579) thinks Nebel's views of the ruins the only ones ever published, and he enumerates various second-hand writers (iv. 579).

Cf. Fegeux, "Les ruines de la Quemada," in the *Revue d'Ethnologie,* i. 119. The noticeable features of these ruins are their massiveness and height of walls, their absence of decoration and carved idols, and the lack of pottery and the smaller relics. Their history, notwithstanding much search, is a blank.

* After a photograph in Bandelier's *Archæological Tour,* p. 68. He thinks it was intended to be a bearer of a torch, and has no symbolical meaning.

Bancroft (iv. ch. 7) has given a separate chapter to the antiquities of Oajaca (Oaxaca) and Guerrero, as the most southern of what he terms the Nahua people, including and lying westerly of the Isthmus of Tehuantepec, and he speaks of it as a region but little known to travellers, except as they pass through a part of it lying on the commercial route from Acapulco to the capital city of Mexico. Bancroft's summary, with his references, must suffice for the inquirer for all except the principal group of ruins in this region, that of Mitla (or Lyó-Baa), of which a full recapitulation of authorities may be made, most of which are also to be referred to for the lesser ruins, though, as Bancroft points out, the information respecting Monte Alban and Zachila is far from satisfactory. Of Monte Alban, Dupaix and Charnay are the most important witnesses, and the latter says that he considers Monte Alban "one of the most precious remains, and very surely the most ancient of the American civilizations."[1] On Dupaix alone we must depend for what we know of Zachila.



GENERAL PLAN OF MITLA.*

It is, however, of Mitla (sometime Miquitlan, Mictlan) that more considerable mention must be made, and its ruins, about thirty miles southerly from Mexico, have been oftenest visited, as they deserve to be; and we have to regret that Stephens never took them within the range of his observations. Their demolition had begun during a century or two previous to the Spanish Conquest, and was not complete even then. Nature is gloomy, and even repulsive in its desolation about the ruins;[2] but a small village still exists among them. The place is mentioned by Duran[3] as inhabited about 1450; Motolinía describes it as still lived in,[4] and in 1565–74 it had a gobernador of its own. Burgoa speaks of it in 1644.[5]

The earliest of the modern explorers were Luis Martin, a Mexican architect, and Colonel de la Laguna, who examined the ruins in 1802; and it was from Martin and his drawings that Humboldt drew the information with which, in 1810, he first engaged the attention of the general public upon Mitla, in his *Vues des Cordillères.* Dupaix's visit was in 1806. The architect Eduard L. Mühlenpfordt, in his *Versuch einer getreuen Schilderung der Republik Mejico* (Hannover, 1844, in 2 vols.), says that he made plans and drawings in 1830,[6] which, passing into the hands of Juan B. Carriedo, were used by him to illustrate a paper, "Los palacios antiguos de Mitla," in the *Ilustracion Mexicana* (vol. ii.), in which he set forth the condition of the ruins in 1852. Meanwhile, in 1837, some drawings had been made, which were twenty years later reproduced in the ninth volume of the *Smithsonian Contributions to Knowledge*, as Brantz Mayer's *Observations on Mexican history and archæology, with a special notice of Zapotec, remains as delineated in Mr. J. G. Sawkins's drawings of Mitla, etc.* (Washington, 1857). Bancroft points out (iv. 406) that the inaccuracies and impossibilities of Sawkins' drawings are such as to lead to the conclusion that he pretended to explorations which he never made, and probably drafted his views from some indefinite information; and that Mayer was deceived, having no more precise statements than Humboldt's by which to test the drawings. Matthieu Fossey visited the ruins in 1838; but his account in his *Le Méxique* (Paris, 1857) is found by Bancroft to be mainly a borrowed one. G. F. von Tempsky's *Mitla, a narrative of incidents and personal adventure on a journey in Mexico, Guatemala and Salvador, 1853–1855, edited by J. S. Bell* (London, 1858), deceives us by the title into supposing that considerable attention is given in the book to Mitla, but we find him spending but a part of a day there in February, 1854 (p. 250). The book is not prized; Bandelier calls it of small scientific value, and Bancroft says his plates must have been made up from other sources than his own observations.[7] Charnay, here, as well as elsewhere, made for us some important photographs in 1859.[8] This kind of illustration received new accessions of value when Emilio Herbrüger issued a eries of thirty-four fine plates as *Album de Vistas fotográficas de las Antiguas Ruinas de los palacios de itla* (Oaxaca, 1874). In 1864, J. W. von Müller, in his *Reisen in den Vereinigten Staaten, Canada und exico* (Leipzig, in 3 vols.), included an account of a visit.[1] The most careful examination made since Banroft summarized existing knowledge is that of Bandelier in his *Archæological Tour in Mexico in 1881* oston, 1885), published as no. ii. of the American series of the *Papers of the Archæological Institute of merica*, which is illustrated with heliotypes and sketch plans of the ruins and architectural details in all eir geometrical symmetry. Bancroft (iv. 392, etc.) could only give a plan of the ruins based on the sketches Mühlenpfordt as published by Carriedo, but the student will find a more careful one[2] in Bandelier, who so gives detailed ones of the several buildings (pl. xvii., xviii.)

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[1] Cf. Bandelier, p. 320.

[2] Bandelier, p. 276.

[3] Ramirez, ed. 1867.

[4] His brief account is copied by Mendieta and Torquemada, and is cited in Bandelier, p. 324.

[5] *Geog. Descripcion*, ii. cited in Bandelier, 324. Cf. *Soc. Mex. Geog. Boletin*, vii. 170.

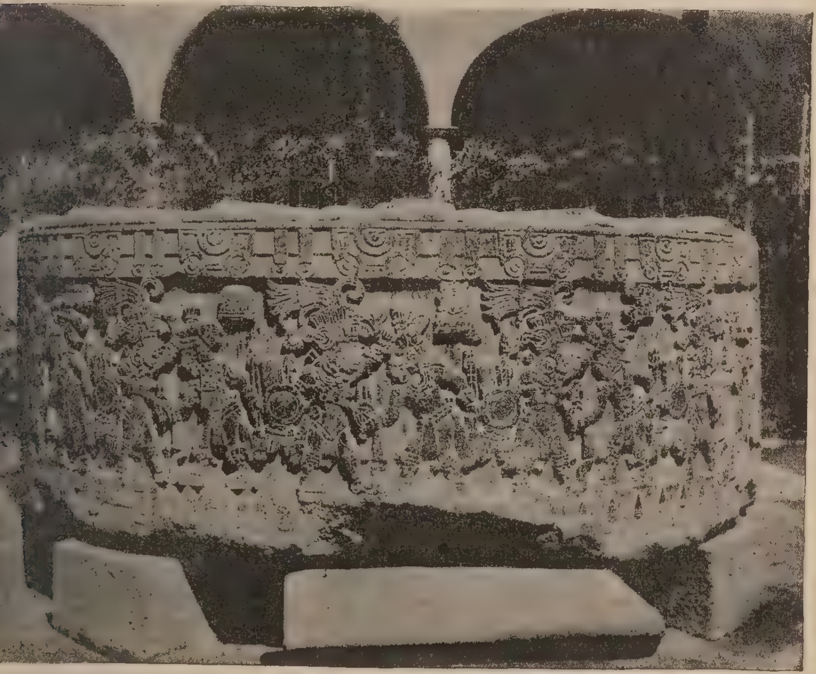
[6] Bandelier says (p. 279) that he saw them in the library of the Institute of Oaxaca, and that, though admirable, they have a certain tendency to over-restoration, — the besetting sin of all explorers who make drawings.

[7] Cf. Field, no. 1612.

[8] *Ruines*, etc., 261, and Viollet le Duc, p. 74; *Anciens Villes*, ch. 24.

* After Bandelier's sketch (*Archæological Tour*, p. 276). KEY: A, the ruins on the highest ground, with a church and curacy built into the walls. B, C, E, are ruins outside the village. D is within the modern village. F is beyond the river.

There is no part of Spanish America richer in architectural remains than the northern section of Yucatan, nd Bancroft (iv. ch. 5) has occasion to enumerate and to describe with more or less fullness between fifty and xty independent groups of ruins.[3] Stephens explored forty-four of these abandoned towns, and such was e native ignorance that of only a few of them could anything be learned in Merida. And yet that this



SACRIFICIAL STONE.*

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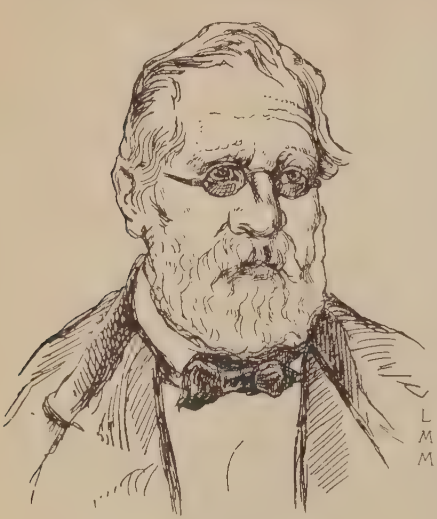
[1] There is a *Rapport sur les ruines*, by Doutrelaine, in *Archives de la Commission Scientifique du Mexique* l. iii.); Nadaillac (p. 364) and Short (p. 361) have epitized results, and Louis H. Aymé gives some *Notes on tla* in the *Amer. Antiq. Soc. Proc.*, April, 1882, p. 82; ncroft (iv. 391) enumerates various second-hand descripns.

[2] I do not understand Bandelier's statement (p. 277) that it is taken from Bancroft's plan, which it only resembles in a general way.

[3] Bancroft classifies their architectural peculiarities (iv. pp. 267–279).

* After a photograph in Bandelier's *Archæological Tour*, p. 67. See on another page, cut of the court-yard of the seum, where this stone is preserved. Cf. Humboldt, pl. xxi.; Bandelier in *Amer. Antiq.*, 1878; Bancroft, iv. 509; evens's *Flint Chips*, 311. There is a discussion of the stone in Orozco y Berra's *El Cuauhxicalli de Tizoc*, in the *ales del Museo Nacional*, i. no. 1; ii. no. 1. On the sacrificial stone of San Juan Teotihuacan, see paper by Amos Butler in the *Amer. Antiq.*. vii. 148. A cut in Clavigero (ii.) shows how the stone was used in sacrifices; the engrav- has been often copied. In Mrs. Nuttall's view this stone simply records the periodical tribute days (*Am. Ass. Adv. Proc.*, Aug. 1886).

country was the land of a peculiar architecture was known to the earliest explorers. Francisco Hernandez d Cordova in 1517, Juan de Grijalva in 1518, Cortés himself in 1519, and Francisco de Montejo in 1527 observe the ruins in Cozumel, an island off the northwest coast of the peninsula, and at other points of the shore.[1] I is only, however, within the present century tha we have had any critical notices. Rio heard reports of them merely. Lorenzo de Zavala sa only Uxmal, as his account given in Dupai shows. The earliest detailed descriptions wer those of Waldeck in his *Voyage pittoresque et archéologique dans la province d'Yucatan* (Pari 1838, folio, with steel plates and lithographs), bu he also saw little more than the ruins of Uxma in the expedition in which he had received pecuniary support from Lord Kingsborough.[2] It is t John L. Stephens and his accompanying draughtsman, Frederic Catherwood, that we owe by far th most essential part of our knowledge of the Yucatan remains. He had begun a survey of Uxma in 1840, but had made little progress when the illness of his artist broke up his plans. Accordingl he gave the world but partial results in his *Incidents of Travel in Central America.* Not satis fied with his imperfect examination, he returned t Yucatan in 1841, and in 1843 published at Ne York the book which has become the main sourc of information for all compilers ever since, his *Incidents of Travel in Yucatan* (N. Y., 1842; London, 1843; again, N. Y., 1856, 1858). It was i the early days of the Daguerrean process, an Catherwood took with him a camera, from whic his excellent drawings derive some of their fidelity. They appeared in his own *Views of Ancient Monumen in Central America* (N. Y., 1844), on a larger scale than in Stephens's smaller pages.



WALDECK.*

Stephens's earlier book had had an almost immediate success. The reviewers were unanimous in commendation, as they might well be.[3] It has been asserted that it was in order to avail of this new interest that a resident of New Orleans, Mr. B. M. Norman, hastened to Yucatan, while Stephens was there a second time, an during the winter of 1841–42 made the trip among the ruins, which is recorded in his *Rambles in Yucatan, o Notes of Travel through the peninsula, including a Visit to the Remarkable Ruins of Chi-chen, Kaba Zayi, and Uxmal* (New York, 1843).[4]

The Daguerrean camera was also used by the Baron von Friederichsthal in his studies at Uxmal an Chichen-Itza, and his exploration seems to have taken place between the two visits of Stephens, as Bancro determines from a letter (April 21, 1841) written after the baron had started on his return voyage to Europe In Paris, in October, 1841, under the introduction of Humboldt, Friederichsthal addressed the Academy, an his paper was printed in the *Nouvelles Annales des Voyages* (xcii. 297) as "Les Monuments de l'Yucatan." The camera was not, however, brought to the aid of the student with the most satisfactory results ti Charnay, in 1858, visited Izamal, Chichen-Itza, and Uxmal. He gave a foretaste of his results in the *Bulletin de la Soc. de Géog.* (1861, vol. ii. 364), and in 1863 gave not very extended descriptions, relying mostl on his *Atlas* of photographs in his *Cités et Ruines Américaines*, a part of which volume consists of th architectural speculations of Viollet le Duc. Beside the farther studies of Charnay in his *Anciens Villes d Nouveau Monde* (Paris, 1885), there have been recent explorations in Yucatan by Dr. Augustus Le Plongeon and his wife, mainly at Chichen-Itza, in which for a while he had the aid and countenance of Mr. Stephe Salisbury, Jr.,[7] of Worcester, Mass. Le Plongeon's results are decidedly novel and helpful, but they wer xpressed with more license of explication than satisfied the committee of that society, when his papers were eferred to them for publication, and than has proved acceptable to other examiners.[1] Nearly all other escriptions of the Yucatan ruins have been derived substantially from these chief authorities.[2]

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[1] See Vol. II. ch. 3. Bancroft (ii. p. 784) collates the early accounts of the habitations of the people, and (iv. 254, 260, 261) the descriptions of the ruins and statelier edifices, as seen by these explorers.

[2] *For. Q. Rev.*, xviii. 251.

[3] Cf. *Poole's Index*, p. 1439.

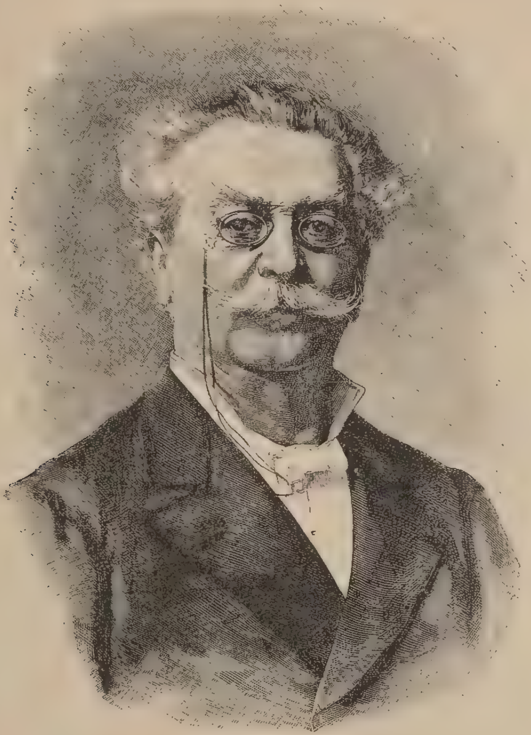
[4] Bancroft, iv. 145; Field, no. 1138; Leclerc, no. 1217; Pilling, p. 2767; *Dem. Review*, xi. 529. Cf. *Poole's Index*, p. 1439.

[5] *Registro Yucateco*, ii. 437; *Diccionario Univers* (México, 1853), x. 290.

[6] Bandelier, *Am. Antiq. Soc. Proc.*, n. s., i. 92, calls th paper "not very valuable."

[7] This gentleman, since the death of his father, of th same name, succeeded, after an interval, the elder antiquary in the president's chair of the American Antiquaria Society.

* After an etching published in the *Annuaire de la Soc. Amér. de France.* Cf. *Amer. Antiq. Soc. Proc.*, Octobe 1875.



DÉSIRÉ CHARNAY.*

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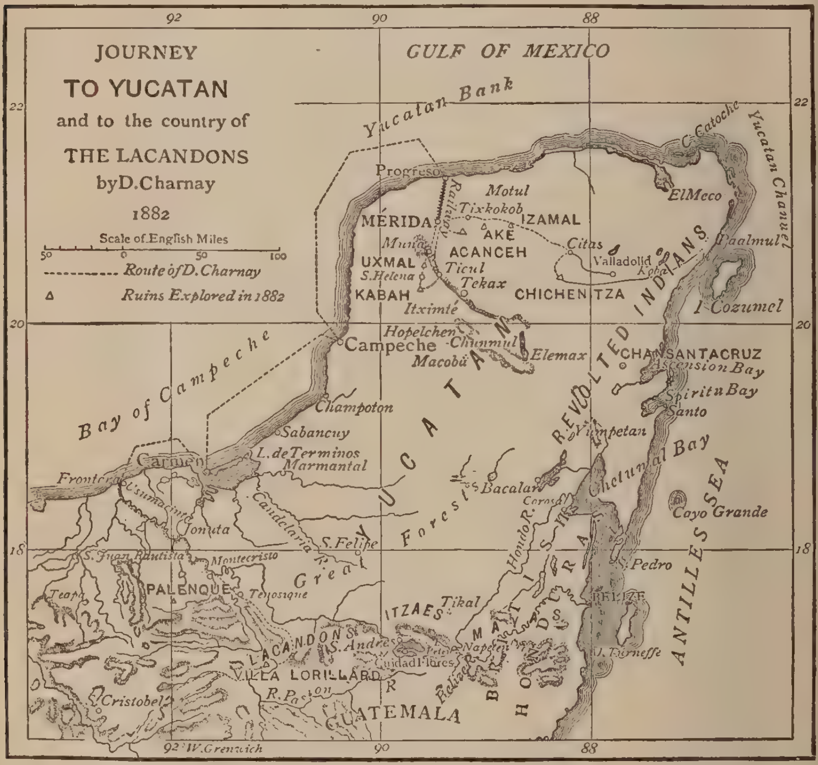
[1] Cf. Short, p. 396. Le Plongeon retorts (*Amer. Antiq. Soc. Proc.*, n. s., i. 282) by telling his critic that he had ever been in Yucatan. Considering the effect of contact in nany of those who have written of the ruins, it may be a uestion if the implication is valuable as a piece of criticism. Mr. Salisbury and Dr. Le Plongeon reported from time to ime in the *Amer. Antiq. Soc. Proc.* the results of the atter's investigations, and the researches to which they ave rise. Those in April, 1876, and April, 1877, of these *Proceedings*, were privately printed by Mr. Salisbury, as *The Mayas*, etc. In April, 1878, Mr. Salisbury reported ipon the "Terra-cotta figures from Isla Mujeres." In Oct., 878, there were communications from Dr Le Plongeon, and from Alice D. Le Plongeon, his wife. In April, 1879, Dr. Le Plongeon communicated a letter on the affinities of Central America and the East. Since this the Le Plongeons have found other channels of communication. Dr. Le Plongeon expanded his somewhat extravagant notions of Oriental affinities in his *Sacred mysteries among the Mayas and the Quiches, 11,500 years ago; their relation to the sacred mysteries of Egypt, Greece, Chaldea, and India. Freemasonry in times anterior to the temple of Solomon* (New York, 1886).

His preface is largely made up with a rehearsal of his rebuffs and in complaints of the want of public appreciation of his labors. He is, however, as confident as ever, and deciphers the bas-reliefs and mural inscriptions of Chichen-Itza by "the ancient hieratic Maya alphabet" which he claims to have discovered, and shows this alphabet in parallel columns with that of Egypt as displayed by Champollion and Bunsen. Mrs. Le Plongeon published her *Vestiges of the Mayas* in New York, in 1881, and gathered some of her periodical writings in her *Here and There in Yucatan* (N. Y., 1886). Cf. her letter on the ancient records of Yucatan in *The Nation*, xxix. 224.

[2] Baldwin (p. 125), in a condensed way, and likewise Short (ch. 8) and Bancroft (iv. ch. 5), more at length, have mainly depended on Stephens. Cf. references in Bancroft, iv. 147, and Bandelier's list in the *Amer. Antiq. Soc. Proc.*, n. s., i. 82, 95. E. H. Thompson has contributed papers in *Ibid.* Oct., 1886, p. 248, and April, 1887, p. 379, and on the ruins of Kich-Moo and Chun-Kal-Cin in April,

* Reproduced from an engraving in the London edition, 1887, of the English translation of his *Ancient Cities of the New World*.

The principal ruins of Yucatan are those of Uxmal and Chichen-Itza, and references to the literature of each will suffice. Those at Uxmal are in some respects distinct in character from the remains of Honduras and of Chiapas. There are no idols as at Copan. There are no extensive stucco-work and no tablets as at Palenqué. The general type is Cyclopean masonry, faced with dressed stones. The Casa de Monjas, or nunnery (so called), is often considered the most remarkable ruin in Central America; and no architectural



FROM CHARNAY.*

1888, p. 162. Brasseur, beside his *Hist. Nat. Civ.*, ii. 20, has something in his introduction to his *Relation de Landa.*

The description of the ruins at Zayi, which Stephens gives, shows that some of the rooms were filled solid with masonry, and he leaves it as an unaccountable fact; but Morgan (*Houses and House Life*, p. 267) thinks it shows that the builders constructed a core of masonry, over which they reared the walls and ceilings, which last, after hardening, were able to support themselves, when the cores were removed; and that in the ruins at Zayi we see the cores unremoved.

* Also in the *Bull. Soc. de Géog. de Paris*, 1882 (p. 542). The best large (36×28 in.) topographical and historical map of Yucatan, showing the site of ruins, is that of Huebbe and Azuar, 1878. The *Plano de Yucatan*, of Santiago Nigra de San Martin, also showing the ruins, 1848, is reduced in Stephen Salisbury's *Mayas* (Worcester, 1877), or in the *Amer. Antiq. Soc. Proc.*, April, 1876, and April, 1877. V. A. Malte-Brun's map, likewise marking the ruins, is in Brasseur de Bourbourg's *Palenqué* (1866). There are maps in C. G. Fancourt's *Hist. Yucatan* (London, 1854); Dupaix's *Antiquités Méxicaines*; Waldeck's *Voyage dans la Yucatan* (his MS. map was used by Malte-Brun). Cf. the map of Yucatan and Chiapas, in Brasseur and Waldeck's *Monuments Anciens du Méxique* (1866). Perhaps the most convenient map to use in the study of Maya antiquities is that in Bancroft's *Nat. Races*, iv. Cf. Crescentio Carrillo's "Geografía Maya" in the *Anales del Museo nacional de México*, ii. 435.

The map in Stephens's *Yucatan*, vol. i., shows his route among the ruins, but does not pretend to be accurate for regions off his course.

The *Journal of the Royal Geog. Soc.*, vol. xi., has a map showing the ruins in Central America.

The best map to show at a glance the location of the ruins in the larger field of Spanish America is in Bancroft's *Nat. Races*, iv.

eature of any of them has been the subject of more inquiry than the protuberant ornaments in the cornices, hich are usually called elephants' trunks.[1] It has been contended that the place was inhabited in the days Cortes.[2]

The earliest printed account of Uxmal is in Cogolludo's *Yucathan* (Madrid, 1688), pp. 176, 193, 197; but was well into this century before others were written. Lorenzo de Zavala gave but an outline account in his *otice*, printed in Dupaix in 1834. Waldeck (*Voyage Pitt.* 67, 93) spent eight days there in May, 1835, and tephens gives him the credit of being the earliest describer to attract attention. Stephens's first visit in 1840 as hasty (*Cent. Amer.*, ii. 413), but on his second visit (1842) he took with him Waldeck's *Voyage*, and his

RUINED TEMPLE AT UXMAL.*

escription and the drawings of Catherwood were made with the advantage of having these earlier drawings compare. Stephens (*Yucatan*, i. 297) says that their plans and drawings differ materially from Waldeck's; ut Bancroft, who compares the two, says that Stephens exaggerated the differences, which are not material, xcept in a few plates (Stephens's *Yucatan*, i. 163; ii. 264 — ch. 24, 25). About the same time Norman and riederichsthal made their visits. Bancroft (iv. 150) refers to the lesser narratives of Carillo (1845), and nother, recorded in the *Registro Yucateco* (i. 273, 361), with Carl Bartholomæus Heller (April, 1847) in his *eisen in Mexico* (Leipzig, 1853). Charnay's *Ruines* (p. 362), and his *Anciens Villes* (ch. 19, 20), record isits in 1858 and later. Brasseur reported upon Uxmal in 1865 in the *Archives de la Com. Scientifique du éxique* (ii. 234, 254), and he had already made mention of them in his *Hist. Nations Civ.*, ii. ch. 1.[3]

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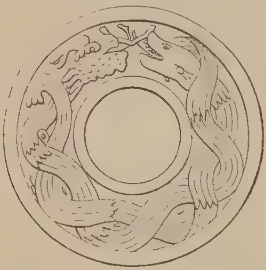
[1] Cf. the *pros* and *cons* in Waldeck and Charnay. Waleck first named the ornaments as "Elephants' trunks" *oy. Pitt.* p. 74). There are cuts in Stephens, reproduced Bancroft. There is also a cut in Norman. Cf. E. H. hompson in *Amer. Antiq. Soc. Proc.*, April, 1887, p. 382.

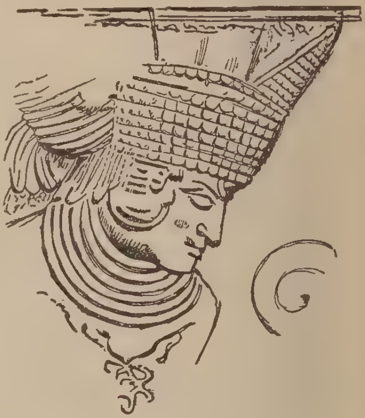
[2] Stephens, *Yucatan*, ii. 265, gives an ancient Indian map (1557), and extracts from the archives of Mani, which lead him to infer that at that time it was an inhabited Indian town.

[3] Bancroft (iv. 151) gives various references to second-

* After a cut in Ruge's *Gesch. des Zeitalters der Entdeckungen*, p. 357.

The ruins of Chichen-Itza make part of the eastern group of the Yucatan remains. As was not the case with some of the other principal ruins, the city in its prime has a record in Maya tradition; it was known in the days of the Conquest, and has not been lost sight of since,[1] though its ruins were not visited by explorers till well within the present century, the first of whom, according to Stephens, was John Burke, in 1838. Stephens had heard of them and mentioned them to Friederichsthal, who was there in 1840 (*Nouv. Annales des Voyages*, xcii. 300-306). Norman was there in February, 1842 (*Rambles*, 104), and did not seem aware that any one had been there before him; and Stephens himself, during the next month (*Yucatan*, ii. 282), made the best record which we have. Charnay made his observations in 1858 (*Ruines*, 339, — cf. *Anciens Villes*, ch. 18), and gives us nine good photographs. The latest discoverer is Le Plongeon, whose investigations were signalized by the finding (1876) of the statue of Chackmool, and by other notable researches (*Am. Antiq. Soc. Proc.*, April, 1877; October, 1878).[2]


FROM CHICHEN-ITZA.*


FROM CHICHEN-ITZA.†

It seems hardly to admit of doubt that the cities — if that be their proper designation — of Yucatan were the work of the Maya people, whose descendants were found by the Spaniards in possession of the peninsula and that in some cases, like those of Uxmal and Toloom, their sacred edifices did not cease to be used til some time after the Spaniards had possessed the country. Such were the conclusions of Stephens,[3] the sanest mind that has spent its action upon these remains; and he tells us that a deed of the region where Uxmal is situated, which passed in 1673, mentions the daily religious rites which the natives were then celebrating there and speaks of the swinging doors and cisterns then in use. The abandonment of one of the buildings, at least is brought down to within about two centuries, and comparisons of Catherwood's drawings with the descrip- tions of more recent explorers, by showing a very marked deterioration within a comparatively few years enable us easily to understand how the piercing roots of a rapidly growing vegetation can make a greater havoc

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hand descriptions, noted before 1875, to which may be added those in Short, p. 347; Nadaillac, 334; *Amer. Antiquarian*, vii. 257, and again, July, 1888.

Probably the most accurate of the plans of the ruins is that of Stephens (*Yucatan*, i. 165), which is followed by Bancroft (iv. 153). Brasseur's report has a plan, and others, all differing, are given by Waldeck (pl. viii.), Norman (p. 155), and Charnay (*Ruines*, p. 62). Views and cuts of details are found in Waldeck, Stephens, Charnay, — whence later summarizers like Bancroft, Baldwin, and Short have drawn their copies; while special cuts are copied in Armin (*Das Heutige Mexico*); Larenaudière (*Mexique et Guatemala*, Paris, 1847); Le Plongeon (*Sacred Mysteries*); Ruge (*Zeitalter der Entdeckungen*, p. 357); Morgan (*Houses*, etc., ch. xi.), and in various others. One can best trace the varieties and contrasts of the different accounts of the various edifices in Bancroft's collations of their statements. His constant citation, even to scorn them, of the impertinencies of George Jones's *Hist. of Anc. America* (London, 1842), — the later notorious Count Johannes — was hardly worth while.

[1] Landa described the ruins. *Relation*, p. 340.

[2] All other accounts are based on these. Bancroft, who gives the best summary (iv. 221), enumerates many of the second-hand writers, to whom Short (p. 396) must be added. Stephens gives a plan (ii. 290) which Bancroft (iv. 222) follows; and it apparently is worthy of reasonable confidence which cannot be said of Norman's. The ruins present some features not found in others, and the most interesting of such may be considered the wall paintings, one representing a boat with occupants, which Stephens found o the walls of the building called by him the Gymnasium, because of stone rings projecting from the walls (see annexed cut), which were supposed by him to have been used i ball games. Norman calls the same building the Temple Charnay, the Cirque; but the native designation is Iglesia

[3] *Yucatan*, i. 94. Cf. Bancroft, *Native Races*, ii. 117; v 164, 342.

* After a cut in Squier's *Serpent Symbol*. There are two of these rings in the walls of one of the buildings twenty o thirty feet from the ground. They are four feet in diameter. Cf. Stephens's *Yucatan*, ii. 304; Bancroft, iv. 230.

† A bas-relief, one of the best preserved at Chichen-Itza, after a sketch in Charnay and Viollet-le-Duc's *Cités et Ruine Américaines* (Paris, 1863), p. 53, of which Viollet-le-Duc says: "Le profil du guerrier se rapproche sensiblement le types du Nord de l'Europe."

a century than will occur in temperate climates. The preservation of paint on the walls, and of wooden lin- ls in some places, also induce a belief that no great time, such as would imply an extinct race of builders, is ecessary to account for the present condition of the ruins, and we must always remember how the Spaniards sed them as quarries for building their neighboring towns. How long these habitations and shrines stood in eir perfection is a question about which archæologists have had many and diverse estimates, ranging from undreds to thousands of years. There is nothing in the ruins themselves to settle the question, beyond a udy of their construction. So far as the traditionary history of the Mayas can determine, some of them may ave been built between the third and the tenth century.[1]

We come now to Chiapas. The age of the ruins of Palenqué [2] can only be conjectured, and very indefinitely ough perhaps there is not much risk in saying that they represent some of the oldest architectural structures nown in the New World, and were very likely abandoned three or four centuries before the coming of the paniards. Still, any confident statement is unwise. Perhaps there may be some fitness in Brasseur's belief at the stucco additions and roofs were the work of a later people than those who laid the foundations.[3] Bancroft (iv. 289) has given the fullest account of the literature describing these ruins. They seem to have been st found in 1750, or a few years before. The report reaching Ramon de Ordoñez, then a boy, was not for- otten by him, and prompted him to send his brother in 1773 to explore them. Among the manuscripts in e Brasseur Collection (*Bib. Mex.-Guat.*, p. 113; Pinart, no. 695) are a *Memoria relativa à las ruinas . . . e Palenqué*, and *Notas de Chiapas y Palenqué*, which are supposed to be the record of this exploration writ- n by Ramon, as copied from the original in the Museo Nacional, and which, in part at least, constituted the port which Ramon made in 1784 to the president of the Audiencia Real. Ramon's view was that he had hit pon the land of Ophir, and the country visited by the Phœnicians. This same president now directed José ntonio Calderon to visit the ruins, and we have his "Informe" translated in Brasseur's *Palenqué* (introd. 5). From February to June of 1785, Antonio Benasconi, the royal architect of Guatemala, inspected the ins under similar orders. His report, as well as the preceding one, with the accompanying drawings, were spatched to Spain, where J. B. Muñoz made a summary of them for the king. I do not find any of them ve been printed. The result of the royal interest in the matter was, that Antonio del Rio was next commis- oned to make a more thorough survey, which he accomplished (May–June, 1787) with the aid of a band of tives to fell the trees and fire the rubbish. He broke through the walls in a reckless way, that added greatly the devastation of years. Rio's report, dated at Palenqué June 24, 1787, was published first in 1855, in the *iccionario Univ. de Geog.*, viii. 528.[4] Meanwhile, beside the copy of the manuscript sent to Spain, other anuscripts were kept in Guatemala and Mexico; and one of these falling into the hands of a Dr. M'Quy, was ken to England and translated under the title *Description of the Ruins of an Ancient City discovered near alenque in Guatemala, Spanish America, translated from the Original MS. Report of Capt. Don A. Del io; followed by Teatro Critico Americano, or a Critical Investigation and Research into the History of e Americans, by Doctor Felix Cabrera* (London, 1822).[5]

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[1] Bancroft collates the views of different writers (iv. 285). e himself holds that these buildings are more ancient an those of Anáhuac; consequently he rejects the argu- ents of Stephens, that it was by the Toltecs, after they mi- ated south from Anáhuac, that these constructions were ised (*Native Races*, v. 165, and for references, p. 169). arnay (*Bull. de la Soc. de Géog.*, Nov., 1881) believes ey were erected between the twelfth and fourteenth cen- ries.

It is well known now that the concentric rings are a use- ss guide in tropical regions to determine the age of trees, ough in the past, the immense size of trees as well as the position of soil have been used to determine the supposed es of ruins. Waldeck counted a ring a year in getting o thousand years for the time since the abandonment of lenqué; but Charnay (Eng. tr. *Ancient Cities*, p. 260) ys that these rings are often formed monthly. Cf. Na- illac, p. 323.

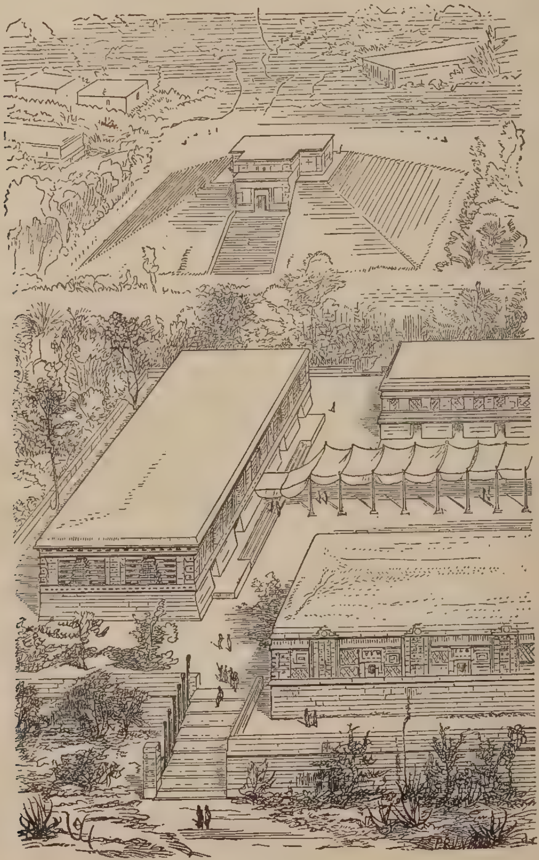
[2] So called because near a modern village of that name, unded by the Spaniards about 1564. Bancroft (iv. 296) ys the ruins are ordinarily called by the natives Casas de edra. Ordoñez calls them Nachan, but without giving y authority, and some adopt the Aztec equivalent Cal- acan, city of the serpents. Because Xibalba is held by me to be the name of the great city of this region in the adowy days of Votan, that name has also been applied to e ruins. Otolum, or the ruined place, is a common des- nation thereabouts, but Palenqué is the appellation in use most travellers and writers.

[3] The fact is, that widely distinct estimates have been ld, some dating them back into the remotest antiquity, d others making them later than the Conquest. Bancroft (iv. 362) collates these statements. Cf. Dr. Earl Flint in *Amer. Antiquarian*, iv. 289. Morelet identifies them with the Toltec remains, supposing them to be the work of that people after their emigration, and to be of about the same age as Mitla. Charnay (*Anc. Cities of the New World*, p. 260) claims that Cortes knew the place as the religious metropolis of the Acaltecs. On the question of Cortes' knowledge see *Science*, Feb. 27, 1885, p. 171; and *Ibid.* (by Brinton) March 27, 1885, p. 248.

[4] The original is in the Roy. Acad. of Hist. at Madrid (Brasseur, *Bib. Mex.-Guat.*, p. 125), and is called *Descripcion del terreno publacion antigua.*

[5] Field, no. 231; Sabin, xvii. p. 292. The report of Rio was brief, and as we would judge now, superficial. Dupaix treats him disparagingly. The appended essay by Cabrera, an Italian, is said to have been largely filched from Ramon's paper, which had been confidentially placed in his hands (Short, 207). A Spanish text of Cabrera is in the Museo Nacional. Cf. Brasseur (*Bib. Mex.-Guat.*), p. 30; Pinart, no. 186. It is a question if the plates, which constituted the most interesting part of the English book, be Rio's after all; for though they profess to be engraved after his drawings, they are suspiciously like those made by Castañeda, twenty years after Rio's visit (Bancroft, iv. 290). David B. Warden translated Rio's report in the *Recueil de voyages et de Mémoires, par la Soc. de la Géog. de Paris* (vol. ii.), and gave some of the plates. (Cf. Warden's *Recherches sur les antiquités de l'Amérique Septentrionale*, Paris, 1827, in *Mém. de la Soc. de Géog.*) There is a German version, *Beschreibung einer alten Stadt* (Berlin, 1832), by J. H. von Minutoli, which is provided with an introductory essay.

The results of the explorations of Dupaix, made early in the present century by order of Carlos IV. of Spain, long remained unpublished. His report and the drawings of Castañeda lay uncared for in the Mexican archives during the period of the Revolution. Latour Allard, of Paris, obtained copies of some of the drawings, and from these Kingsborough got copies, which he engraved for his *Mexican Antiquities*, in which Dupaix's report was also printed in Spanish and English (vols. iv., v., vi.). It is not quite certain whether the originals or copies were delivered (1828) by the Mexican authorities to Baradère, who a few years later secured their publication with additional matter as *Antiquités méxicaines. Relation des trois expéditions du capitaine*



A RESTORATION BY VIOLLET-LE-DUC.*

Dupaix, ordonnées en 1805, 1806 et 1807, pour la recherche des antiquités du pays, notamment celles Mitla et de Palenque ; accompagnée des dessins de Castañeda, et d'une carte du pays exploré ; suivie d' parallèle de ces monuments avec ceux de l'Égypte, de l'Indostan, et du reste de l'ancien monde par Al andre Lenoir ; d'une dissertation sur l'origine de l'ancienne population des deux Amériques par [*D.* *Warden ; avec un discours préliminaire par M. Charles Farcy, et des notes explicatives, et autres doc ments par MM. Baradère, de St. Priest* [*etc.*]. (Paris : 1834, texte et atlas.)[1] The plates of this editi re superior to those in Kingsborough and in Rio; and are indeed improved in the engraving over Castañeda's rawings. The book as a whole is one of the most important on Palenqué which we have. The investigaons were made on his third expedition (1807–8). A tablet taken from the ruins by him is in the Museo acional, and a cast of it is figured in the *Numis. and Antiq. Soc. of Philad. Proc.*, Dec. 4, 1884.

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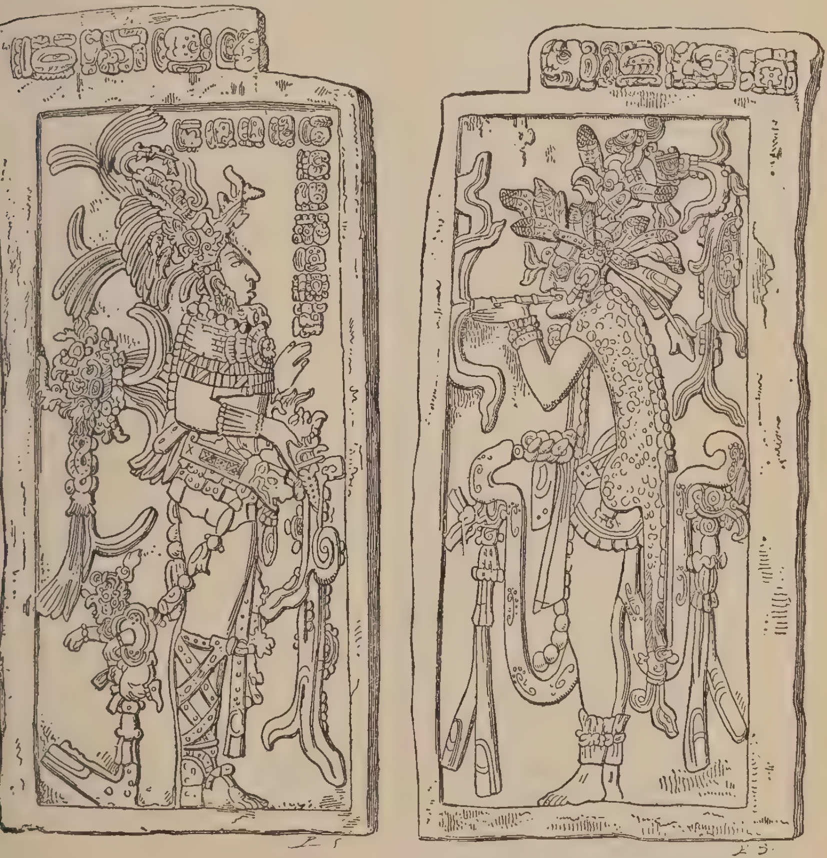
[1] Sabin, x. 209, 213. Cf. *Annales de Philos. Chrétienne*, xi.

* From *Histoire de l'Habitation Humaine, par Viollet-le-Duc* (Paris, 1875). There is a restoration of the Palenc palace — so called — in Armin's *Das heutige Mexico* (copied in Short, 342, and Bancroft, iv. 323).

During the twenty-five years next following Dupaix, we find two correspondents of the French and English eographical Societies supplying their publications with occasional accounts of their observations among the uins. One of them, Dr. F. Corroy,[1] was then living at Tabasco; the other, Col. Juan Gallindo,[2] was resident the country as an administrative officer.



SCULPTURES, TEMPLE OF THE CROSS, PALENQUÉ.*

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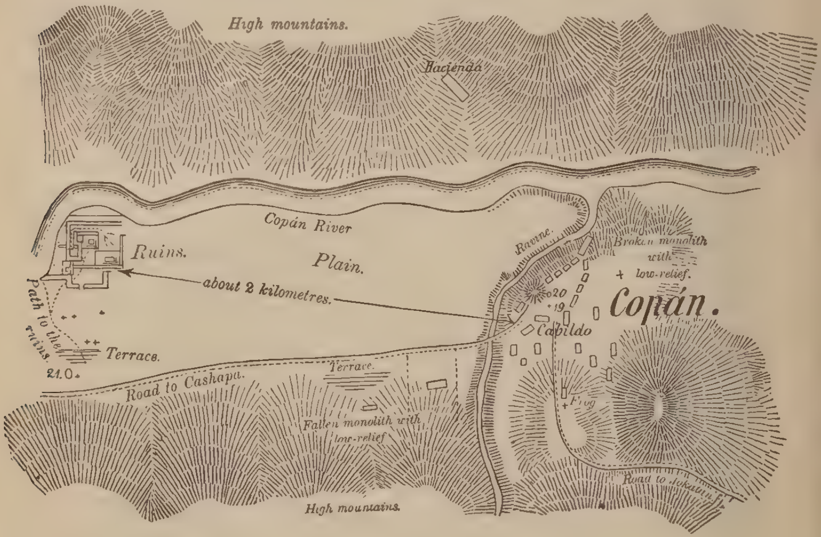
[1] *Bull. de la Soc. de Géog. de Paris*, ix. (1828) 198. Du- aix, i. 2d div. 76.

[2] "Palenque et autres lieux circonvoisins," in Dupaix, i. d div. 67 (in English in *Literary Gazette*, London, 1831, no. 769, and in *Lond. Geog. Soc. Journal*, iii. 60). Cf. *Bull. de la Soc. de Géog. de Paris*, 1832. He is overenthusiastic, as Bandelier thinks (*Amer. Ant. Soc. Proc.*, n. s., i. p. 111).

* These slabs, six feet high, were taken from Palenqué, and when Stephens saw them they were in private hands at an Domingo, near by, but later they were placed in the church front in the same town, and here Charnay took impresions of them, from which they were engraved in *The Ancient Cities*, etc., p. 217, and copied thence in the above cuts. his same type of head is considered by Rosny the Aztec head of Palenqué (*Doc. écrits de la Antiq. Amer.*, 73), and as elonging to the superior classes. In order to secure the convex curve of the nose and forehead an ornament was someimes added, as shown in a head of the second tablet at Palenqué, and in the photograph of a bas-relief, preserved in the useo Archeogico at Madrid, given by Rosny (vol. 3), and hypothetically called by him a statue of Cuculkan. This rnament is not infrequently seen in other images of this region.

Bandelier (*Peabody Mus. Repts.*, ii. 126), speaking of the tablet of the Cross of Palenqué, says: "These tablets and igures show in dress such a striking analogy of what we know of the military accoutrements of the Mexicans, that it is a trong approach to identity."

Fréderic de Waldeck, the artist who some years before had familiarized himself with the character of the ruins in the preparation of the engravings for Rio's work, was employed in 1832–34. He was now considerably over sixty years of age, and under the pay of a committee, which had raised a subscription, in which the Mexican government shared. He made the most thorough examination of Palenqué which has yet been made. Waldeck was a skilful artist, and his drawings are exquisite; but he was not free from a tendency to improve or restore, where the conditions gave a hint, and so as we have them in the final publication they have not been accepted as wholly trustworthy. He made more than 200 drawings, and either the originals or copies — Stephens says "copies," the originals being confiscated — were taken to Europe. Waldeck announced his book in Paris, and the public had already had a taste of his not very sober views in some communications which he had sent in Aug. and Nov., 1832, to the Société de Géographie de Paris. Long years of delay followed, and Waldeck had lived to be over ninety, when the French government bought his collection[1] (in 1860), and made preparations for its publication. Out of the 188 drawings thus secured, 56 were selected and were admirably engraved, and only that portion of Waldeck's text was preserved which was purely descriptive, and not all of that. Selection was made of Brasseur de Bourbourg, who at that time had never visited the ruins,[2] to furnish some introductory matter. This he prepared in an *Avant-propos*, recapitulating the progress of such studies; and this was followed by an *Introduction aux Ruines de Palenqué*, narrating the course of explorations up to that time: a section also published separately as *Recherches sur les Ruines de Palenqué et sur les origines de la civilisation du Méxique* (Paris, 1886), and finally Waldeck's own *Description des Ruines*, followed by the plates, most of which relate to Palenqué. Thus composed, a large volume was published under the general title of *Monuments anciens du Méxique Palenqué et autres ruines de l'ancienne civilisation du Méxique. Collection de vues* [*etc.*], *cartes et plans dessinés d'après nature et relevés par M. de Waldeck. Texte rédigé par M. Brasseur de Bourbourg.* (Paris, 1864–1866.)[3] While Waldeck's results were still unpublished the ruins of Palenqué were brought most effectively to the attention of the English reader in the *Travels in Central America* (vol. ii. ch. 17) of Stephens, which was illustrated by the drawings of Catherwood,[4] since famous. These better cover the field, and are more exact than those of Dupaix.



PLAN OF COPAN (RUINS AND VILLAGE).*

Bancroft refers to an anonymous account in the *Registro Yucateco* (i. 318). One of the most intelligent of the later travellers is Arthur Morelet, who privately printed his *Voyage dans l'Amérique Central, Cuba et le Yucatan*, which includes an account of a fortnight's stay at Palenqué. His results would be difficult of access xcept that Mrs. M. F. Squier, with an introduction by E. G. Squier, published a translation of that part of it elating to the main land as *Travels in Central America, including accounts of regions unexplored since the 'onquest* (N. Y., 1871).[1]

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[1] The report by Angrand, which induced this purchase, is in the work as published.

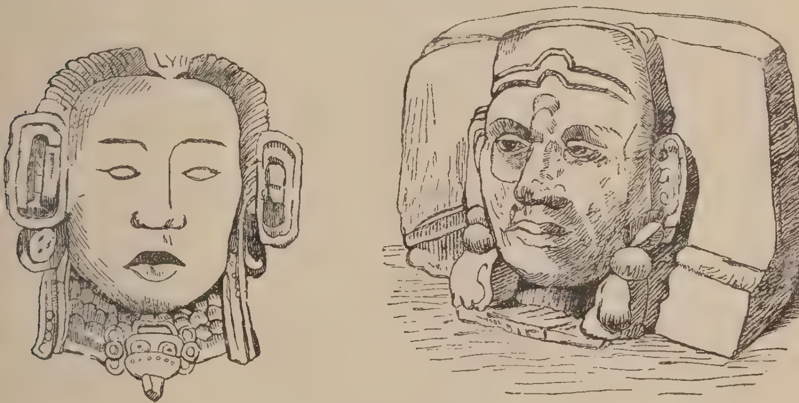
[2] He had described them in his *Hist. Nat. Civ.*, i. ch. 3.

[3] The book usually sells for about 150 francs.

[4] Given, also enlarged, in the folio known as Catherwood's *Views*.

* From *The Stone Sculptures of Copán and Quiriguá* (N. Y., 1883) of Meye and Schmidt.

Désiré Charnay was the first to bring photography to the aid of the student when he visited Palenqué in 858, and his plates forming the folio atlas accompanying his *Cités et Ruines Américaines* (1863), pp. 72, 411, re, as Bancroft (iv. 293) points out, of interest to enable us to test the drawings of preceding delineators, and o show how time had acted on the ruins since the visit of Stephens. His later results are recorded in his *.es anciennes villes du Nouveau Monde* (Paris, 1885).[2]



YUCATAN TYPES.*

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[1] The German version was made from this (Jena, 1872).

[2] Particularly ch. 13, 14. Charnay is the last of the exlorers of Palenqué. All the other accounts of the ruins ound here and there are based on the descriptions of hose who have been named, or at least nothing is added f material value by other actual visitors like Norman *Rambles in Yucatan*, p. 284). Bancroft (iv. 294) enumertes a number of such second-hand describers. The most nportant work since Bancroft's summary is Manuel Larainzar's *Estudios sobre la historia de America, sus ruinas antigüedades, y sobre el origen de sus habitantes* (Mexico, 875–78), in five vols., all of whose plates are illustrations rom the ruins of Palenqué, which are described and comared with other ancient remains throughout the world. 'f. Brühl, *Culturvölker d. alt. Amerikas*. Plans of the uins will be found in Waldeck (pl. vii., followed mainly y Bancroft, iv. 298, 307), Stephens (ii. 310), Dupaix (pl. i.), Kingsborough (iv. pl. 13), and Charnay (ch. 13 and 4). The views of the ruins given by these authorities nainly make up the stock of cuts in all the popular narraives.

The most interesting of the carvings is what is known as he Tablet of the Cross, which was taken from one of the ninor buildings, and is now in the National Museum at Vashington. It has often been engraved, but such repreentations never satisfied the student till they could be ested by the best of Charnay's photographs. (Engravings Brasseur and Waldeck, pl. 21, 22; Rosny's *Essai sur déchiffrement*, etc.; Minutoli's *Beschreibung einer alten 'tadt in Guatimala* (Berlin, 1832); Stephens's *Cent. mer.*, ii.; Bancroft, *Nat. Races*, iv. 333; Charnay, *Les nciens Villes*, and Eng. transl. p. 255; Nadaillac, 325; *'owell's Rept.*, i. 221; cf. p. 234; *Amer. Antiquarian*, vii. oo.) The most important discussion of the tablet is harles Rau's *Palenqué Tablet in the U. S. National Museum* (Washington, 1879), being the *Smithsonian Contri. to Knowledge*, no. 331, or vol. xxii. It contains an account of the explorations that have been made at Palenqué, and a chapter on the "Aboriginal writing in Mexico, Central America, and Yucatan, with some account of the attempted translations of Maya hieroglyphics." Rau's conclusion is that it is a Phallic symbol. Cf. a summary in *Amer. Antiquarian*, vi., Jan., 1884, and in *Amer. Art Review*, 1880, p. 217. Rau's paper was translated into Spanish and French: *Tablero del Palenque en el Museo nacional de los Estados-Unidos* [traducido por Joaquin Davis y Miguel Perez], in the *Anales del Museo nacional.* Tomo 2, pp. 131–203. (México, 1880.) *La Stèle de Palenqué du Musée national des Etats-Unis, à Washington. Traduit de l'Anglais avec autorisation de l'auteur.* In the *Annales du Musée Guimet*, vol. x. (Paris, 1887.) Rau's views were criticised by Morgan.

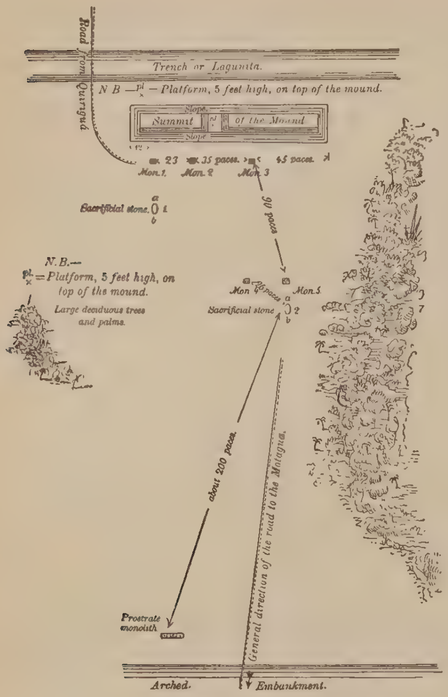
There are papers by Charency on the interpretation of the hieroglyphs in *Le Muséon* (Paris, 1882, 1883).

The significance of the cross among the Nahuas and Mayas has been the subject of much controversy, some connecting it with a possible early association with Christians in ante-Columbian days (Bancroft, iii. 468). On this later point see Bamps, *Les traditions relatives à l'homme blanc et au signe de la cruz en Amérique à l'Epoque précolumbienne*, in the *Compte rendu, Congrès des Américanistes* (Copenhagen, 1883), p. 125; and "Supposed vestiges of early Christian teaching in America," in the *Catholic Historical Researches* (vol. i., Oct., 1885). The symbolism is variously conceived. Bandelier (*Archæol. Jour.*) holds it to be the emblem of fire, indeed an ornamented fire-drill, which later got mixed up with the Spanish crucifix. Brinton (*Myths of the New World*, 95) sees in it the four cardinal points, the rain-bringers, the symbol of life and health, and cites (p. 96) various of the early writers in proof. Brinton (*Am. Hero Myths*, 155) claims to have been the first to connect the Palenqué cross with the four cardinal points.

* Given by Rosny, *Doc. Écrits de la Antiq. Amér.*, p. 73, as types of the short-headed race which preceded the Aztec ccupation. They are from sculptures at Copan. Cf. Stephens's *Cent. America*, i. 139; Bancroft, iv. 101.

There have been only two statues found at Palenqué, in connection with the Temple of the Cross,[1] but the considerable number of carved figures discovered at Copan,[2] as well as the general impression that these latter ruins are the oldest on the American continent,[3] have made in some respects these most celebrated of the Honduras remains more interesting than those of Chiapas. It is now generally agreed that the ruins of Copan[4] do not represent the town called Copan, assaulted and captured by Hernando de Choves in 1530, though the identity of names has induced some writers to claim that these ruins were inhabited when the Spaniards came.[5] The earliest account of them which we have is that in Palacio's letter to Felipe II., written (1576) hardly more than a generation after the Conquest, and showing that the ruins then were much in the same condition as later described.[6] The next account is that of Fuentes y Guzman's *Historia de Guatemala* (1689), now accessible in the Madrid edition of 1882; but for a long time only known in the citation in Juarros' *Guatemala* (p. 56), and through those who had copied from Juarros.[7] His account is brief, speaks of Castilian costumes, and is otherwise so enigmatical that Brasseur calls it mendacious. Colonel Galindo, in visiting the ruins in 1836, confounded them with the Copan of the Conquest.[8] The ruins also came under the scrutiny of Stephens in 1839, and they were described by him, and drawn by Catherwood, for the first time with any fullness and care, in their respective works.[9]

Always associated with Copan, and perhaps even older, if the lower relief of the carvings can bear that interpretation, are the ruins near the village of Quiriguá, in Guatemala, and



PLAN OF THE RUINS OF QUIRIGUA.*

The bird and serpent — the last shown better in Charnay's photograph than in Stephens's cut — is (*Myths*, 119) simply a rebus of the air-god, the ruler of the winds. Brinton says that Waldeck, in a paper on the tablet in the *Revue Américaine* (ii. 69), came to a similar conclusion. Squier (*Nicaragua*, ii. 337) speaks of the common error of mistaking the tree of life of the Mexicans for the Christian symbol. Cf. Powell's *Second Rept., Bur. of Ethnol.*, p. 208; the *Fourth Rept.*, p. 252, where discredit is thrown upon Gabriel de Mortillet's *Le Signe de la cross avant le Christianisme* (Paris, 1866); Joly's *Man before Metals*, 339; and Charnay's *Les Anciens Villes* [illegible]r Eng. transl. p. 85). Cf. for various applications the references in Bancroft's index (v. p. 671).

[1] Both were alike, and one was broken in two. There are engravings in Waldeck, pl. 25; Stephens, ii. 344, 349; Squier's *Nicaragua*, 1856, ii. 337; Bancroft, iv. 337.

[2] These have been the subject of an elaborate folio, thought, however, to be of questionable value, *Die Steinbildwerke von Copân und Quiriguâ, aufgenommen von Heinrich Meye; historisch erläutert und beschrieben von Dr. Julius Schmidt* (Berlin, 1883), of which there is an English translation, *The stone sculptures of Copán and Quiriguá*; translated from the German by A. D. Savage (New York, 1883). It gives twenty plates, Catherwood's plates, and the cuts in Stephens, with reproductions in accessible books (Bancroft, iv. ch. 3; Powell's *First Rept. Bur. Ethn.* 224; Ruge's *Gesch. des Zeitalters; Amer. Antiquarian*, viii. 204–6), will serve, however, all purposes.

[3] Squier says: "There are various reasons for believing that both Copan and Quirigua antedate Olosingo and Palenqué, precisely as the latter antedate the ruins of Quiché, Chichen-Itza, and Uxmal, and that all of them were the work of the same people, or of nations of the same race, dating from a high antiquity, and in blood and language precisely the same that was found in occupation of the country by the Spaniards."

[4] Named apparently from a neighboring village.

[5] Ref. in Bancroft, iv. 79.

[6] This account can be found in Pacheco's *Col. Doc. inéd.* vi. 37, in Spanish; in Ternaux's *Coll.* (1840), imperfect, and in the *Nouv. Annales des Voyages*, 1843, v. xcvii. p. 18, in French; in Squier's *Cent. America*, 242, and in his ed. of Palacio (N. Y. 1860), in English; and in Alexander von Frantzius's *San Salvador und Honduras im Jahre* 1576, with notes by the translator and by C. H. Berendt.

[7] Stephens, *Cent. Am.*, i. 131, 144; Warden, 71; *Nouvelles Annales des Voyages*, xxxv. 329; Bancroft, iv. 82; *Bull. de la Soc. de Géog. de Paris*, 1836, v. 267; Short, 56, 82, — not to name others.

[8] His account is in the *Amer. Antiq. Soc. Trans.*, ii.; *Bull. Soc. de Géog.* 1835; Dupaix, a summary, i. div. 2, p. 73; Bradford's *Amer. Antiq.*, in part. Galindo's drawings are unknown. Stephens calls his account "unsatisfactory and imperfect."

[9] *Central America*, i. ch. 5–7; *Views of Anc. Mts.* It is Stephens's account which has furnished the basis of those given by Bancroft (iv. ch. 3); Baldwin, p. 111; Short, 356;

* From Meye and Schmidt's *Stone Sculptures of Copán and Quiriguá* (N. Y., 1883).

known by that name. Catherwood first brought them into notice;[1] but the visit of Karl Scherzer in 1854 produced the most extensive account of them which we have, in his *Ein Besuch bei den Ruinen von Quiriguá* (Wien, 1855).[2]

The principal explorers of Nicaragua have been Ephraim George Squier, in his *Nicaragua*,[3] and Frederick Boyle, in his *Ride across a Continent* (Lond. 1868),[4] and their results, as well as the scattered data of others,[5] are best epitomized in Bancroft (iv. ch. 2), who gives other references to second-hand descriptions (p. 29). Since Bancroft's survey there have been a few important contributions.[6]

III. Bibliographical Notes on the Picture-Writing of the Nahuas and Mayas.

In considering the methods of record and communication used by these peoples, we must keep in mind the two distinct systems of the Aztecs and the Mayas;[7] and further, particularly as regards the former, we must not forget that some of these writings were made after the Conquest, and were influenced in some degree by Spanish associations. Of this last class were land titles and catechisms, for the native system obtained for some time as a useful method with the conquerors for recording the transmission of lands and helping the instruction by the priests.[8]

It is usual in tracing the development of a hieroglyphic system to advance from a purely figurative one — in which pictures of objects are used — through a symbolic phase; in which such pictures are interpreted conventionally instead of realistically. It was to this last stage that the Aztecs had advanced; but they mingled the two methods, and apparently varied in the order of reading, whether by lines or columns, forwards, upwards, or backwards. The difficulty of understanding them is further increased by the same object holding different meanings in different connections, and still more by the personal element, or writer's style, as we should call it, which was impressed on his choice of objects and emblems.[9] This rendered interpretation by no means easy to the aborigines themselves, and we have statements that when native documents were referred

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Nadaillac, 328, and all others. Bancroft in his bibliog. note (iv. pp. 79–81), which has been collated with my own notes, mentions others of less importance, particularly the report of Center and Hardcastle to the Amer. Ethnol. Soc. in 1860 and 1862, and the photographs made by Ellerley, which Brasseur (*Hist. Nat. Civ.* i. 96; ii. 493; *Palenqué*, 8, 17) found to confirm the drawings and descriptions of Catherwood and Stephens.

Stephens (*Cent. Am.*, i. 133) made a plan of the ruins reproduced in *Annales des Voyages* (1841, p. 57), which is the basis of that given by Bancroft (iv. 85). Dr. Julius Schmidt, who was a member of the Squier expedition in 1852–53, furnished the historical and descriptive text to a work which in the English translation by A. D. Savage is known as *Stone Sculptures of Copán and Quiriguá, drawn by Heinrich Meye* (N. Y., 1883). What Stephens calls the Copan idols and altars are considered by Morgan (*Houses and House Life*, 257), following the analogy of the customs of the northern Indians, to be the grave-posts and graves of Copan chiefs. Bancroft (iv. ch. 3) covers the other ruins of Honduras and San Salvador; and Squier has a paper on those of Tenampua in the *N. Y. Hist. Soc. Proc.*, 1853.

[1] Stephens's *Central America*, ii. ch. 7; and *Nouvelles Annales des Voyages*, vol. lxxxviii. 376, derived from Catherwood.

[2] Other travellers who have visited them are John Baily, *Central America* (Lond. 1850); A. P. Maudsley, *Explorations in Guatemala* (Lond. 1883), with map and plans of ruins, in the *Proc. Roy. Geog. Soc.* p. 185; W. T. Brigham's *Guatemala* (N. Y., 1886). Bancroft (iv. 109) epitomizes the existing knowledge; but the remains seem to be less known than any other of the considerable ruins. There are a few later papers: G. Williams on the Antiquities of Guatemala, in the *Smithsonian Report*, 1876; Simeon Habel's "Sculptures of Santa Lucia Cosumalhuapa in Guatemala" in the *Smithson. Contrib.* xxii. (Washington, 1878), or "Sculptures de Santa (Lucia) Cosumalwhuapa dans le Guatémala, avec une rélation de voyages dans l'Amérique Centrale et sur les côtes occidentales de l'Amérique du Sud, par S. Habel. Traduit de l'anglais, par J. Pointet," with eight plates, in the *Annales du Musée Guimet*, vol. x. pp. 219–259 (Paris, 1887); Philipp Wilhelm Adolf Bastian's "Stein Sculpturen aus Guatemala," in the *Jahrbuch der k. Museen zu Berlin*, 1882, or "Notice sur les pierres sculptées du Guatémala récemment acquises par le Musée royal d'ethnographie de Berlin. Traduit avec autorisation de l'auteur par J. Pointet," in the *Annales du Musée Guimet*, vol. x. pp. 261–305 (Paris, 1887); and C. E. Vreeland and J. F. Bransford, on the *Antiquities at Pantaleon, Guatemala* (Washington, 1885), from the *Smithsonian Report* for 1884.

[3] *Nicaragua; its people, scenery, monuments, and the proposed interoceanic canal* (N. Y., 1856; revised 1860), a portion (pp. 303–362) referring to the modern Indian occupants. Squier was helped by his official station as U. S. chargé d'affaires; and the archæological objects brought away by him are now in the National Museum at Washington. He published separate papers in the *Amer. Ethnol. Soc. Trans.* ii.; *Smithsonian Ann. Rept.* v. (1850); *Harper's Monthly*, x. and xi. Cf. list in Pilling, nos. 3717, etc.

[4] His explorations were in 1865–66. He carried off what he could to the British Museum.

[5] Like Bedford Pim and Berthold Seemann's *Dottings on the Roadside in Panama, Nicaragua, and Mosquito* (Lond., 1869).

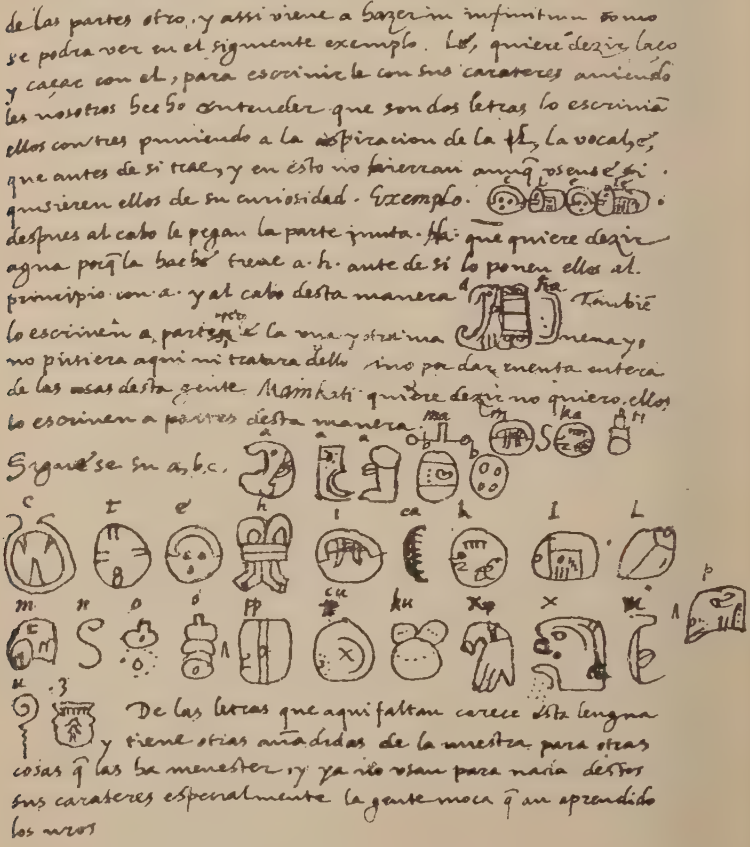
[6] J. F. Bransford's "Archæological Researches in Nicaragua," in the *Smithsonian Contrib.* (Washington, 1881). Karl Bovallius's *Nicaraguan Antiquities*, with plates (Stockholm, 1886), published by the Swedish Society of Anthropology and Geography, figures various statues and other relics found by the author in Nicaragua, and he says that his drawings are in some instances more exact than those given by Squier before the days of photography. In his introduction he describes the different Indian stocks of Nicaragua, and disagrees with Squier. He gives a useful map of Nicaragua and Costa Rica.

[7] It is only of late years that they have been kept apart, for the elder writers like Kingsborough, Stephens, and Brantz Mayer, confounded them.

[8] The Father Alonzo Ponce, who travelled through Yucatan in 1586, is the only writer, according to Brinton (*Books of Chilan Balam*, p. 5), who tells us distinctly that the early missionaries made use of aboriginal characters in giving religious instruction to the natives (*Relacion Breve y Verdadera*).

[9] Leon y Gama tells us that color as well as form seems to have been representative.

to them it required sometimes long consultations to reach a common understanding.[1] The additional step by which objects stand for sounds, the Aztecs seem not to have taken, except in the names of persons and places, in which they understood the modern child's art of the rebus, where such symbol more or less clearly stands for a syllable, and the representation was usually of conventionalized forms, somewhat like the art of the European herald. Thus the Aztec system was what Daniel Wilson[2] calls "the pictorial suggestion of associated ideas."[3] The phonetic scale, if not comprehended in the Aztec system, made an essential part of



de las partes otro, y assi viene a hazer in infinitum como se podra ver en el siguiente exemplo. Le, quiere dezir laço y caçar con el, para escrivirle con sus carateres aviendoles nosotros hecho entender que son dos letras lo escriviã ellos con tres poniendo a la aspiracion de la l, la vocal e, que antes de si trae, y en esto no hierran aunq̃ vsen d' e si quisieren ellos de su curiosidad. Exemplo. despues al cabo le pegan la parte junta. Ha que quiere dezir agua porq̃ la hache tiene a. h. ante de si lo ponen ellos al principio con a. y al cabo desta manera Tambiẽ lo escriven a partes de la vna y otra manera Yo no pusiera aqui ni tratara dello sino por dar cuenta entera de las cosas desta gente. Ma in kati quiere dezir no quiero, ellos lo escriven a partes desta manera. Siguese su a, b, c. De las letras que aqui faltan carece esta lengua y tiene otras añadidas de la nuestra para otras cosas q̃ las ha menester, y ya no vsan para nada destos sus carateres especialmente la gente moça q̃ an aprendido los nuestros

FAC-SIMILE OF A PART OF LANDA'S MS.*

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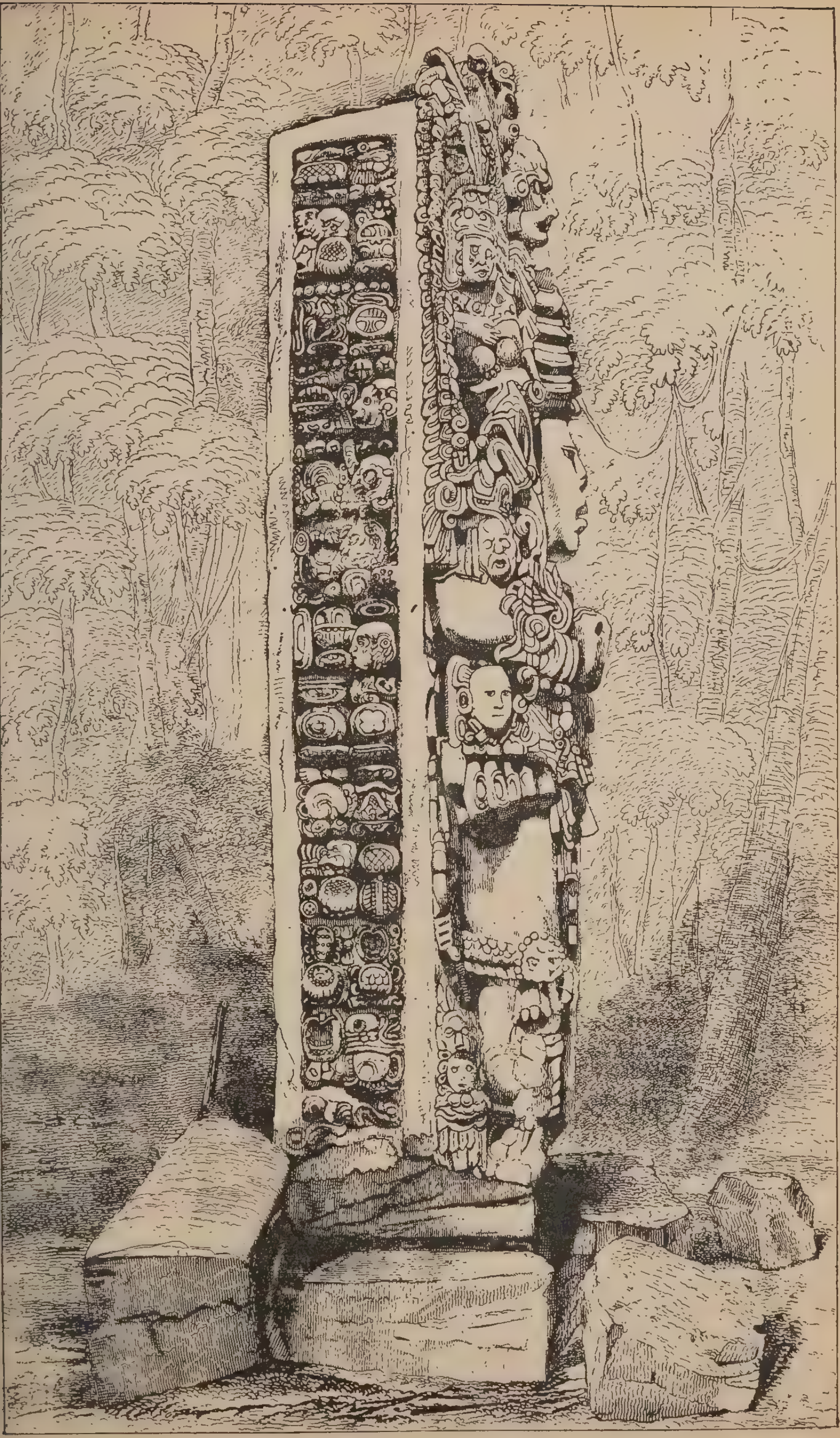
[1] See references on the accepted difficulties in *Native Races*, ii. 551. Mrs. Nuttall claims to have observed certain complemental signs in the Mexican graphic system, "which renders a misinterpretation of the Nahuatl picture-writings impossible" (*Am. Asso. Adv. Science, Proc.*, xxxv. (Aug., 1886); *Peabody Mus. Papers*, i. App.

[2] *Prehist. Man*, ii. 57, 64, for his views.

[3] Bancroft, *Native Races*, ii. ch. 17 (pp. 542, 552) gives a good description of the Aztec system, with numerous references; but on this system, and on the hieroglyphic element in general, see Gomara; Bernal Diaz; Motolinía in Icazbalceta's *Collection*, i. 186, 209; Ternaux's *Collection*, x. 250; Kingsborough, vi. 87; viii. 190; ix. 201, 235, 287, 325; Acosta, lib. vi. cap. 7; Sahagún, i. p. iv.; Torquemada, i. 29, 30, 36, 149, 253; ii. 263, 544; Las Casas's *Hist. Apologética*; Purchas's *Pilgrimes*, iii. 1069; iv. 1135; Clavigero, ii. 187; Robertson's *America*; Boturini's *Idea*, pp. 5, 77, 87, 96, 112, 116; Humboldt's *Vues*, i. 177, 192; Veytia, i. 6, 250; Gallatin in *Am. Ethn. Soc. Trans.* i. 126, 165; Prescott's *Mexico*, i. ch. 4; Brasseur's *Nat. Civ.*, i. pp. xv, xvii; Domenech's *Manuscrit pictographique*, introd.; Mendoza, in the *Boletin Soc. Mex.*

* After a fac-simile in the *Archives de la Soc. Amér. de France, nouv. ser.*, ii. 34. (Cf. pl. xix. of Rosny's *Essai sur le déchiffrement*, etc.) It is a copy, not the original, of Landa's text, but a nearly contemporary one (made thirty years after Landa's death), and the only one known.

NOTE TO OPPOSITE CUT. — This representation of Yucatan hieroglyphics is a reduction of pl. i. in Léon de Rosny's *Essai sur le déchiffrement de l'écriture hiératique de l'Amérique Centrale*, Paris, 1876. Cf. Bancroft, iv. 92; Short, 405



the Maya hieroglyphics, and this was the great distinctive feature of the latter, as we learn from the early descriptions,[1] and from the alphabet which Landa has preserved for us. It is not only in the codices or books of the Mayas that their writing is preserved to us, but in the inscriptions of their carved architectural remains.[2]

When the Abbé Brasseur de Bourbourg found, in 1863, in the library of the Royal Academy of History at Madrid, the MS. of Landa's *Relacion*, and discovered in it what purported to be a key to the Maya alphabet, there were hopes that the interpretation of the Maya books and inscriptions was not far off. Twenty-five years, however, has not seen the progress that was wished for; and if we may believe Valentini, the alphabet of Landa is a pure fabrication of the bishop himself;[3] and even some of those who account it genuine, like Le Plongeon, hold that it is inadequate in dealing with the older Maya inscriptions.[4] Cyrus Thomas speaks of this alphabet as simply an attempt of the bishop to pick out of compound characters their simple elements on the supposition that something like phonetic representations would be the result.[5] Landa's own description[6] of the alphabet accompanying his graphic key[7] is very unsatisfactory, not to say incomprehensible. Brasseur has tried to render it in French, and Bancroft in English; but it remains a difficult problem to interpret it intelligibly.

Brasseur very soon set himself the task of interpreting the Troano manuscript by the aid of this key, and he soon had the opportunity of giving his interpretation to the public when the Emperor Napoleon III. ordered that codex to be printed in the sumptuous manner of the imperial press.[8] The efforts of Brasseur met

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Geog., 2de ed. i. 896; Madier de Montjau's *Chronologie hiéroglyphico-phonetic des rois Aztéques, de 1322 à 1522*, with an introduction "sur l'Ecriture Méxicaine;" Lubbock's *Prehistoric Times*, 279, and his *Origin of Civilization*, ch. 2; E. B. Tylor's *Researches into the Early Hist. of Mankind*, 89; Short's *No. Amer. of Antiq.*, ch. 8; Müller's *Chips*, i. 317; The Abbé Jules Pipart in *Compte-rendu, Congrès des Amér.* 1877, ii. 346; Isaac Taylor's *Alphabets;* Foster's *Prehistoric Races*, 322; Nadaillac, 376, not to cite others. Bandelier has discussed the Mexican paintings in his paper "On the sources for aboriginal history of Spanish America" in *Am. Asso. Adv. Science, Proc.*, xxvii. (1878). See also *Peabody Mus. Reports*, ii. 631; and Orozco y Berra's "Códice Mendozino" in the *Anales del Museo Nacional*, vol. i. Mrs. Nuttall's views are in the *Peabody Mus.*, *Twentieth Report*, p. 567. Quaritch (*Catal.* 1885, nos. 29040, etc.) advertised some original Mexican pictures; a native MS. pictorial record of a part of the Tezcuco domain (supposed A. D. 1530), and perhaps one of the "pinturas" mentioned by Ixtlilxochitl; a colored Mexican calendar on a single leaf of the same supposed date and origin; with other MSS. of the fifteenth and sixteenth centuries. (Cf. also his *Catal.*, Jan., Feb., 1888.)

The most important studies upon the Aztec system have been those of Aubin. Cf. his *Mémoire sur la peinture didactique et l'écriture figurative des Anciens Méxicains*, in the *Archives de la Soc. Amér. de France*, iii. 225 (*Revue Orient. et Amér.*), in which he contended for the rebus-like character of the writings. He made further contributions to vols. iv. and v. (1859-1861). Cf. his "Examen des anciennes peintures figuratives de l'ancien Méxique," in the new series of *Archives*, etc., vol. i.; and the introd. to Brasseur's *Nations Civilisées*, p. xliv.

[1] Bancroft (*Nat. Races*, ii. ch. 24) translates these from Landa, Peter Martyr, Cogulludo, Villagutierre, Mendieta, Acosta, Benzoni, and Herrera, and thinks all the modern writers (whom he names, p. 770) have drawn from these earlier ones, except, perhaps, Medel in *Nouv. Annales des Voyages*, xcvii. 49. Cf. Wilson, *Prehistoric Man*, ii. 61. It will be seen later that Holden discredits the belief in any phonetic value of the Maya system. But compare on the phonetic value of the Mexican and Maya systems, Brinton in *Amer. Antiquarian* (Nov. 1886); Lazarus Geiger's *Contrib. to the Hist. of the Development of the Human Race* (Eng. tr. by David Asher). London, 1880, p. 75; and Zelia Nuttall in *Am. Ass. Adv. Sci. Proc.*, Aug. 1886.

[2] Dr. Bernoulli, who died at San Francisco, in California, in 1878, and whose labors are commemorated in a notice in the *Verhandlungen der Naturforschenden Gesellschaft* (vi. 710) at Basle, found at Tikal, in Guatemala, some fragments of sculptured panels of wood, bearing hieroglyphics as well as designs, which he succeeded in purchasing, and they were finally deposited in 1879 in the Ethnological Museum in Basle, where Rosny saw them, and describes them, with excellent photographic representations, in his *Doc. Ecrits de l'Antiq. Amér.* (p. 97). These tablets are the latest additions to be made to the store already possessed from Palenqué, as given by Stephens in his *Central America, Chiapas, and Yucatan;* those of the Temple of the Cross at Palenqué, after Waldeck's drawings in the *Archives de la Soc. Amér. de France* (ii., 1864); that from Kabah in Yucatan, given by Rosny in his *Archives Paléographiques* (i. p. 178; Atlas, pl. xx.), and one from Chichen-Itza, figured by Le Plongeon in *L'Illustration*, Feb. 10, 1882; not to name other engravings. Rosny holds that Rau's *Palenqué Tablet* (Washington, 1879) gives the first really serviceably accurate reproduction of that inscription. Cf. on Maya inscriptions, Bancroft, ii. 775; iv. 91, 97, 234; Morelet's *Travels;* and Le Plongeon in *Am. Antiq. Soc. Proc.*, n. s., i. 246. This last writer has been thought to let his enthusiasm — not to say dogmatism — turn his head, under which imputation he is not content, naturally (*Ibid.* p. 282).

[3] "Landa's alphabet a Spanish fabrication," appeared in the *Amer. Antiq. Soc. Proc.*, April, 1880. In this, Philipp J. J. Valentini interprets all that the old writers say of the ancient writings to mean that they were pictorial and not phonetic; and that Landa's purpose was to devise a vehicle which seemed familiar to the natives, through which he could communicate religious instruction. His views have been controverted by Léon de Rosny (*Doc. Ecrits de la Antiq. Amér.* p. 91); and Brinton (*Maya Chronicles*, 61), calls them an entire misconception of Landa's purpose.

[4] *Am. Antiq. Soc. Proc.*, n. s., i. 251.

[5] *Troano MS.*, p. viii

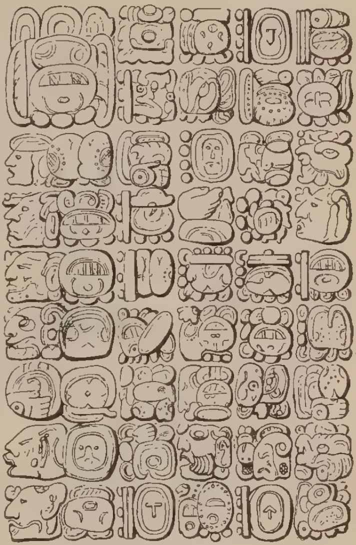
[6] *Relation*, Brasseur's ed., section xli.

[7] This is given in the *Archives de la Soc. Amér. de France*, ii. pl. iv.; in Brasseur's ed. of Landa; in Bancroft's *Nat. Races*, ii. 779; in Short, 425; Rosny (*Essai sur le déchiff.* etc., pl. xiii.) gives a "Tableau des caractères phonétique Mayas d'après Diégo de Landa et Brasseur de Bourbourg."

[8] *Manuscrit Troano Etudes sur le système graphique et la langue des Mayas* (Paris, 1869-70) — the first volume containing a fac-simile of the Codex in seventy plates, with Brasseur's explications and partial interpretation. In the second volume there is a translation of Gabriel de Saint Bonaventure's *Grammaire Maya*, a "Chrestomathie" of Maya extracts, and a Maya lexicon of more than 10,000 words. Brasseur published at the same time (1869) in the *Mémoires de la Soc. d'Ethnographie* a *Lettre à M. Léon de Rosny sur la découverte de documents relatifs à la haute antiquité américaine, et sur le déchiffrement et l'interprétation de l'écriture phonétique et figurative de la langue Maya* (Paris, 1869). He explained his application of Landa's alphabet in the introduction to the *MS. Troano*,

ith hardly a sign of approval. Léon de Rosny criticised him,[1] and Dr. Brinton found in his results nothing commend.[2]

No one has approached the question of interpreting these Maya writings with more careful scrutiny than éon de Rosny, who first attracted attention with his omparative study, *Les écritures figuratives et hiéroglyhiques des différens peuples anciens et moderns* (Paris, 860; again, 1870, augmentée). From 1869 to 1871 he ublished at Paris four parts of *Archives paléographiques e l'Orient et de l'Amérique, publiées avec des notices istoriques et philologiques*, in which he included several tudies of the native writings, and gave a bibliography pp. 101–115) of American paleography up to that time. lis *L'interprétation des anciens textes Mayas* made part f the first volume of the *Archives de la Soc. Amériaine de France* (new series). His chief work, making ne second volume of the same, is his *Essai sur le déhiffrement de l'écriture hiératique de l'Amérique Cenral* (Paris, 1876), and it is the most thorough examinaion of the problem yet made.[3] The last part (4th) was ublished in 1878, and a Spanish translation appeared in 881.



PALENQUÉ HIEROGLYPHICS.*

Wm. Bollaert, who had paid some attention to the paeography of America,[4] was one of the earliest in Engand to examine Brasseur's work on Landa, which he did n a memoir read before the Anthropological Society,[5] and ater in an "Examination of the Central American hierolyphs by the recently discovered Maya alphabet."[6] Brinon[7] calls his conclusions fanciful, and Le Plongeon laims that the inscription in Stephens, which Bollaert orked upon, is inaccurately given, and that Bollaert's reults were nonsense.[8] Hyacinthe de Charency's efforts ave hardly been more successful, though he attempted ne use of Landa's alphabet with something like scientific are. He examined a small part of the inscription of the Palenqué tablet of the Cross in his *Essai de échiffrement d'un fragment d'inscription palenquéene*.[9]

Dr. Brinton translated Charency's results, and, adding Landa's alphabet, published his *Ancient phonetic lphabet of Yucatan* (N. Y., 1870), a small tract.[10] His continued studies were manifest in the introduction n "The graphic system and the ancient records of the Mayas" to Cyrus Thomas's *Manuscript Troano*.[11] n this paper Dr. Brinton traces the history of the attempts which have thus far been made in solving this erplexing problem.[12] The latest application of the scientific spirit is that of the astronomer E. S. Holden,

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p. 36. Brasseur later confessed he had begun at the rong end of the MS. (*Bib. Mex.-Guat.*, introd.). The ebble-shape form of the characters induced Brasseur to call hem *calculiform;* and Julien Duchateau adopted the erm in his paper "Sur l'écriture calculiforme des Mayas" the *Annuaire de la Soc. Amér.* (Paris, 1874), iii. p. 31.

[1] *L'écriture hiératique*, and *Archives de la Soc. Am. e France*, n. s., ii. 35.

[2] *Ancient Phonetic Alphabets of Yucatan* (N. Y., 1870), 7.

[3] It is the development of a paper given at the Nancy ession of the Congrès des Américanistes (1875). Landa's lphabet with the variations make 262 of the 700 signs hich Rosny catalogues. He printed his "Nouvelles Reherches pour l'interpretation des caractères de l'Amérique entrale" in the *Archives*, etc., iii. 118. There is a paper on osny's studies by De la Rada in the Compte-rendu of the openhagen session (p. 355) of the Congrès des Américaistes. Rosny's *Documents écrits de l'antiquité Américaine* Paris, 1882), from the *Mémoires de la Société d'Ethnoraphie* (1881), covers his researches in Spain and Portugal or material illustrative of the pre-Columbian history of merica. Cf. also his "Les sources de l'histoire anté columbienne du nouveau monde," in the *Mémoires de la Soc. d'Ethnographie* (1877). For the titles in full of Rosny's linguistic studies, see Pilling's *Proof-sheets*, p. 663.

[4] *Anthropol. Review*, May, 1864; *Memoirs of the Anthropol. Soc.*, i.

[5] *Memoirs*, etc., ii. 298.

[6] *Memoirs*, etc., 1870, iii. 288; *Trans. Anthrop. Inst. Gt. Britain.*

[7] Introd. to Cyrus Thomas's *MS. Troano.*

[8] *Am. Antiq. Soc. Proc.*, *n. s.*, i. 250.

[9] *Actes de la Soc. philologique*, March, 1870. Cf. *Revue de Philologie*, i. 380; *Recherches sur le Codex Troano* (Paris, 1876); *Actes*, etc., March, 1878; Baldwin's *Anc. America*, App.

[10] Cf. *Sabin's Amer. Bibliopolist*, ii. 143.

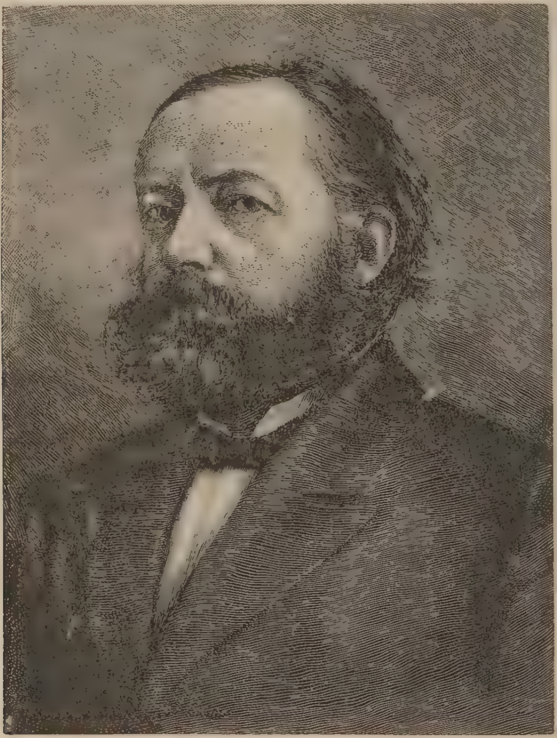
[11] *Contributions to N. A. Ethnology*, *Powell's Survey*, vol. v. Cf. also his *Phonetic elements in the graphic system of the Mayas and Mexicans* in the *Amer. Antiquarian* (Nov., 1886), and separately (Chicago, 1886), and his *Ikonomic method of phonetic writing* (Phila., 1886). Thomas in *The Amer. Antiquarian* (March, 1886) points out the course of his own studies in this direction.

[12] Cf. Short, p. 425. Dr. Harrison Allen in 1875, in the

* After a cut in Wilson's *Prehistoric Man*, ii. p. 63. It is also given in Bancroft (iv. 355), and others. It is from the ablet of the Cross.

who sought to eliminate the probabilities of recurrent signs by the usual mathematical methods of resolving systems of modern cipher.[1]

There are few examples of the aboriginal ideographic writings left to us. Their fewness is usually charged to the destruction which was publicly made of them under the domination of the Church in the years following



LÉON DE ROSNY.*

Amer. Philosophical Society's Transactions, made an analysis of Landa's alphabet and the published codices. Rau, in his *Palenqué Tablet of the U. S. Nat. Museum* (ch. 5), examines what had been done up to 1879. In the same year Dr. Carl Schultz-Sellack wrote on "Die Amerikanischen Götter der vier Weltgegenden und ihre Tempel in Palenqué," touching also the question of interpretation (*Zeitschrift für Ethnologie*, vol. xi.); and in 1880 Dr. Förstemann examined the matter in his introduction to his reproduction of the Dresden Codex.

[1] *Studies in Central American picture-writing* (Washington, 1881), extracted from the *First Report of the Bureau of Ethnology*. His method is epitomized in *The Century*, Dec., 1881. He finds Stephens's drawings the most trustworthy of all, Waldeck's being beautiful, but they embody "singular liberties." His examination was confined to the 1500 separate hieroglyphs in Stephens's *Central America*. Some of Holden's conclusions are worth noting: "The Maya manuscripts do not possess to me the same interest as the stones, and I think it may be certainly said that all of them are younger than the Palenqué tablets, and far younger than the inscriptions at Copan." "I distrust the methods of Brasseur and others who start fro the misleading and unlucky alphabet handed down b Landa," by forming variants, which are made "to satisf the necessities of the interpreter in carrying out some pre conceived idea." He finds a rigid adherence to the stand ard form of a character prevailing throughout the same i scription. At Palenqué the inscriptions read as an Englis inscription would read, beginning at the left and proceedin line by line downward. "The system employed at Pa lenqué and Copan was the same in its general characte and almost identical even in details." He deciphers thre proper names: "all of them have been pure picture-wri ing, except in so far as their rebus character may mak them in a sense phonetic." Referring to Valentini' *Landa Alphabet a Spanish Fabrication*, he agrees in tha critic's conclusions. "While my own," he adds, "wer reached by a study of the stones and in the course of general examination, Dr. Valentini has addressed himsel successfully to the solution of a special problem." Holde thinks his own solution of the three proper names point of departure for subsequent decipherers. The Maya meth od was "pure picture-writing. At Copan this is found i

* After a photogravure in *Les Documents écrits de l'antiquité Américaine* (Paris, 1882). Cf. cut in *Mém. de la Soc d'Ethnographie* (1887), xiii. p. 71.

he Conquest.[1] The alleged agents in this demolition were Bishop Landa, in 1562, at Mani, in Yucatan,[2] nd Bishop Zumárraga at Tlatelalco, or, as some say, at Tezcuco, in Mexico.[3] Peter Martyr[4] has told us omething of the records as he saw them, and we know also from him, and from their subsequent discovery in European collections, that some examples of them were early taken to the Old World. We have further nowledge of them from Las Casas and from Landa himself.[5] There have been efforts made of late years by cazbalceta and Canon Carrillo to mitigate the severity of judgment, particularly as respects Zumárraga.[6] The first, and indeed the only attempt that has been made to bring together for mutual illustration all that was known of these manuscripts which escaped the fire,[7] was in the great work of the Viscount Kingsborough b. 1795, d. 1837). It was while, as Edward King, he was a student at Oxford that this nobleman's passion for Mexican antiquities was first roused by seeing an original Aztec pictograph, described by Purchas (*Pilgrimes*, vol. iii.), and preserved in the Bodleian. In the studies to which this led he was assisted by some special scholars, including Obadiah Rich, who searched for him in Spain in 1830 and 1832, and who after Kingsbor- ugh's death obtained a large part of the manuscript collections which that nobleman had amassed (*Catalogue f the Sale*, Dublin, 1842). Many of the Kingsborough manuscripts passed into the collection of Sir Thomas Phillipps (*Catalogue*, no. 404), but the correspondence pertaining to Kingsborough's life-work seems to have disappeared. Phillipps had been one of the main encouragers of Kingsborough in his undertaking.[8] Kings- borough, who had spent £30,000 on his undertaking, had a business dispute with the merchants who furnished he printing-paper, and he was by them thrown into jail as a debtor, and died in confinement.[9]

Kingsborough's great work, the most sumptuous yet bestowed upon Mexican archæology, was published etween 1830 and 1848, there being an interval of seventeen years between the seventh and eighth volumes. The original intention seems to have embraced ten volumes, for the final section of the ninth volume is signa- ured as for a tenth.[10] The work is called: *Antiquities of Mexico; comprising facsimiles of Ancient Mexi- an Paintings and Hieroglyphics, preserved in the Royal Libraries of Paris, Berlin, and Dresden; in the mperial Library of Vienna; in the Vatican Library; in the Borgian Museum at Rome; in the Library f the Institute of Bologna; and in the Bodleian Library at Oxford; together with the Monuments of New Spain, by M. Dupaix; illustrated by many valuable inedited MSS.* With the theory maintained by Kings- orough throughout the work, that the Jews were the first colonizers of the country, we have nothing to do here; ut as the earliest and as yet the largest repository of hieroglyphic material, the book needs to be examined. The compiler states where he found his MSS., but he gives nothing of their history, though something more s now known of their descent. Peter Martyr speaks of the number of Mexican MSS. which had in his day een taken to Spain, and Prescott remarks it as strange that not a single one given by Kingsborough was ound in that country. There are, however, some to be seen there now.[11] Comparisons which have been made f Kingsborough's plates show that they are not inexact; but they almost necessarily lack the validity that he modern photographic processes give to fac-similes.

Kingsborough's first volume opens with a fac-simile of what is usually called the *Codex Mendoza*, preserved in he Bodleian. It is, however, a contemporary copy on European paper of an original now lost, which was sent y the Viceroy Mendoza to Charles V. Another copy made part of the Boturini collection, and from this Lorenzana[12] engraved that portion of it which consists of tribute-rolls. The story told of the fate of the orig-

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ts earliest state; at Palenqué it was already highly conven- ionalized."

[1] See references in Bancroft's *Nat. Races*, ii. 576.

[2] Cogulludo's *Hist. de Yucatan*, 3d ed., i. 604.

[3] Prescott, i. 104, and references.

[4] Dec. iv., lib. 8.

[5] Brasseur de Bourbourg's *Troano MS.*, i. 9. Cf. on he Aztec books Kirk's Prescott, i. 103; Brinton's *Myths*, o; his *Aborig. Amer. Authors*, 17; and on the Mexican paper, Valentini in *Amer. Antiq. Soc. Proc.*, 2d s., i. 58.

[6] Cf. Icazbalceta's *Don Fray Juan de Zumárraga, pri- ner Obispo y Arzobispo de México* (1529-48). *Estudio iográfico y bibligráfico. Con un apéndice de documentos néditos ó raros* (Mexico, 1881). A part of this work was lso printed separately (fifty copies) under the title of *De a destruccion de antigüedades méxicanas atribuida á los nisioneros en general, y particularmente al Illmo. Sr. D. Fr. Juan de Zumárraga, primer Obispo y Arzobispo de México* (Mexico, 1881). In this he exhausts pretty much ll that has been said on the subject by the bishop himself, y Pedro de Gante, Motolinía, Sahagún, Duran, Acosta, Davila Padilla, Herrera, Torquemada, Ixtlilxochitl, Rob- rtson, Clavigero, Humboldt, Bustamante, Ternaux, Pres- ott, Alaman, etc. Brasseur (*Nat. Civil.*, ii. 4) says of Landa hat we must not forget that he was oftener the agent of he council for the Indies than of the Church. Helps (iii. 74) is inclined to be charitable towards a man in a skeptical ge, so intensely believing as Zumárraga was. Sahagún relates that earlier than Zumárraga, the fourth ruler of his race, Itzcohuatl, had caused a large destruction of native writings, in order to remove souvenirs of the national humiliation.

[7] Humboldt was one of the earliest to describe some of these manuscripts in connection with his *Atlas*, pl. xiii.

[8] Cf. *Catal. of the Phillipps Coll.*, no. 404. An original colored copy of the *Antiquities of Mexico*, given by Kingsborough to Phillipps, was offered of late years by Quaritch at £70-£100; it was published at £175. The usual colored copies sell now for about £40-£60; the uncolored for about £30-£35. It is usually stated that two copies were printed on vellum (British Museum, Bodleian), and ten on large paper, which were given to crowned heads, except one, which was given to Obadiah Rich. Squier, in the *London Athenæum*, Dec. 13, 1856 (Allibone, p. 1033), drew attention to the omission of the last signature of the *Hist. Chichimeca* in vol. ix.

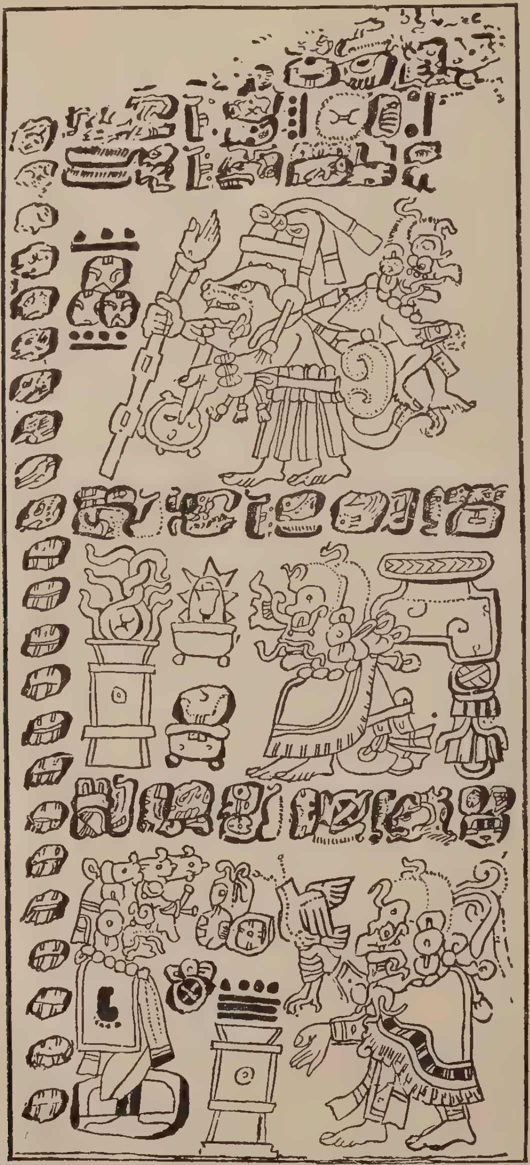
[9] Rich, *Bibl. Amer. Nova*, ii. 233; *Gentleman's Mag.*, May, 1837, which varies in some particulars. Cf. for other details Sabin's *Dictionary*, ix. 485; De Rosny in the *Rev. Orient et Amér.*, xii. 387. R. A. Wilson (*New Conquest of Mexico*, p. 68) gives the violent skeptical view of the material.

[10] Sabin, ix., no. 37,800.

[11] Léon de Rosny (*Doc. écrits de l'Antiq. Amér.*, p. 71) speaks of those in the Museo Archæológico at Madrid.

[12] *Hist. Nueva España.*

inal is, that on its passage to Europe it was captured by a French cruiser and taken to Paris, where it was bought by the chaplain of the English embassy, the antiquary Purchas, who has engraved it.[1] It was then lost



FAC-SIMILE OF PLATE XXV OF THE DRESDEN CODEX.*

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[1] *Pilgrimes*, vol. iii. (1625). It is also included in Thevenot's *Coll. de Voyages* (1696), vol. ii., in a translation. Clavigero (i. 23) calls this copy faulty. See also Kircher's *Œdipus Ægypticus;* Humboldt's plates, xiii., lviii., lix., with his text, in which he quotes Du Palin's *Study of Hieroglyphics*, vol. i. See the account in Bancroft, ii. 241.

* From Cyrus Thomas's *Manuscript Troano.*

ht of, and if Prescott's inference is correct it was not the original, but the Bodleian copy, which came into
rchas' hands.[1]

Beside the tribute-rolls,[2] which make one part of it, the MS. covers the civil history of the Mexicans, with a
rd part on the discipline and economy of the people, which renders it of so much importance in an archæo-
ical sense.[3] The second reproduction in Kingsborough's first volume is what he calls the *Codex Telleriano-*
mensis, preserved in the Bibliothèque Nationale at Paris, and formerly owned by M. Le Tellier.[4] The rest
this initial volume is made up of fac-similes of Mexican hieroglyphics and paintings, from the Boturini and
lden collections, which last is in the Bodleian.

The second Kingsborough volume opens with a reproduction of the *Codex Vaticanus* (the explanation[5] is
volume vi.), which is in the library of the Vatican, and it is known to have been copied in Mexico by Pedro
los Rios in 1566. It is partly historical and partly mythological.[6] The rest of this volume is made up
fac-similes of other manuscripts, — one given to the Bodleian by Archbishop Laud, others at Bologna,[7]
enna,[8] and Berlin.

The third volume reproduces one belonging to the Borgian Museum at Rome, written on skin, and thought
be a ritual and astrological almanac. This is accompanied by a commentary by Frabega.[9] Kingsborough
ves but a single Maya MS., and this is in his third volume, and stands with him as an Aztec production.
nis is the *Dresden Codex*, not very exactly rendered, which is preserved in the royal library in that city, for
nich it was bought by Götz,[10] at Vienna, in 1739. Prescott (i. 107) seemed to recognize its difference from
e Aztec MSS., without knowing precisely how to class it.[11] Brasseur de Bourbourg calls it a religious and
trological ritual. It is in two sections, and it is not certain that they belong together. In 1880 it was re-
oduced at Dresden by polychromatic photography (Chromo-Lichtdruck), as the process is called, under the
iting of Dr. E. Förstemann, who in an introduction describes it as composed of thirty-nine oblong sheets
lded together like a fan. They are made of the bark of a tree, and covered with varnish. Thirty-five have
awings and hieroglyphics on both sides; the other four on one side only. It is now preserved between glass
prevent handling, and both sides can be examined. Some progress has been made, it is professed, in deci-
ering its meaning, and it is supposed to contain "records of a mythic, historic, and ritualistic character."[12]

Another script in Kingsborough, perhaps a Tezcucan MS., though having some Maya affinities, is the
ejérvary Codex, then preserved in Hungary, and lately owned by Mayer, of Liverpool.[13]

Three other Maya manuscripts have been brought to light since Kingsborough's day, to say nothing of three
hers said to be in private hands, and not described.[14] Of these, the *Codex Troano* has been the subject of
uch study. It is the property of a Madrid gentleman, Don Juan Tro y Ortolano, and the title given to the
anuscript has been somewhat fantastically formed from his name by the Abbé Etienne Charles Brasseur

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[1] Prescott, i. 106. He thinks that a copy mentioned in
bineto's *Lectures on the Elements of Hieroglyphics*, and
en in the Escurial, may perhaps be the original. Hum-
ldt calls it a copy.

[2] Humboldt placed some tribute-rolls in the Berlin
prary, and gave an account of them. See his pl. xxxvi.

[3] Cf. references in Bancroft's *Native Races*, ii. 529. The
Explicacion" of the MS. is given in Kingsborough's vol-
ne v., and an "interpretation" in vol. vi.

[4] Kingsborough's "explicacion" and "explanation" are
ven in his vols. v. and vi. Rosny has given an "explica-
on avec notes par Brasseur de Bourbourg" in his *Ar-*
ives paléographiques (Paris, 1870–71), p. 190, with an
las of plates. Cf. references in Bancroft, ii. 530; and in
nother place (iii. 191) this same writer cautions the reader
gainst the translation in Kingsborough, and says that it
as every error that can vitiate a translation. Humboldt
inks his own plates, lv. and lvi., of the codex carefully
ade.

[5] Prescott says (i. 108) of this that it bears evident marks
recent origin, when "the hieroglyphics were read with
e eye of faith rather than of reason." Cf. Bancroft, *Nat.*
aces, ii. 527.

[6] Portions of it are also reproduced in the *Archives de la*
oc. Amér. de France; in Rosny's *Essai sur le déchiffre-*
ent de l'Ecriture Hiératique; and in Powell's *Third*
ept. Bur. of Ethnology, p. 56. Cf. also Humboldt's *At-*
s, pl. xiii.; and H. M. Williams's translation of his *Aues*,
145.

[7] It is known to have been given in 1665 by the Marquis
Caspi by Count Valerio Zani. There is a copy in the
useum of Cardinal Borgia at Veletri.

[8] Known to have been given in 1677 by the Duke of Saxe-
isenach to the Emperor Leopold. Some parts are repro-
uced in Robertson's *America*, Lond., 1777, ii. 482.

[9] Humboldt, *Vues des Cordillères*, p. 89; pl. 15, 27, 37; Prescott, i. 106. There is a single leaf of it reproduced in Powell's *Third Rept. Bur. of Eth.*, p. 33.

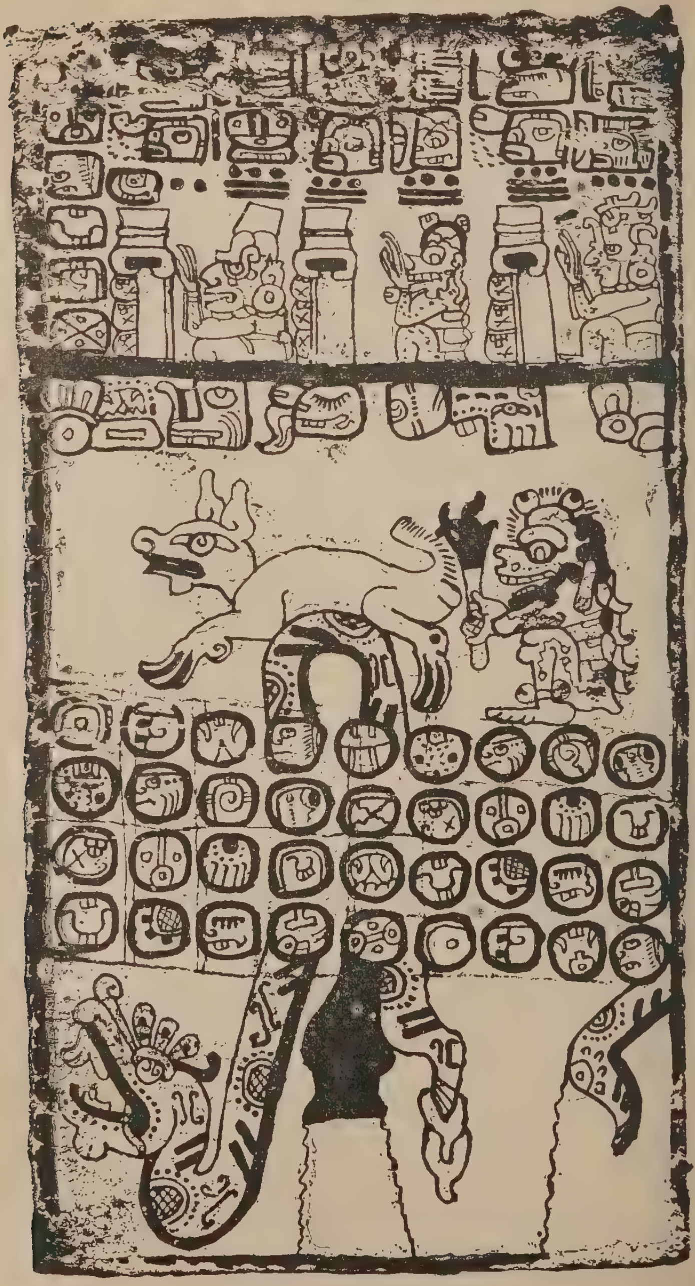
[10] Cf. his *Denkwürdigkeiten der Dresdener Bibliothek* (1744), p. 4.

[11] Stephens (*Central America*, ii. 342, 453; *Yucatan*, ii. 292, 453) was in the same way at a loss respecting the conditions of the knowledge of such things in his time. Cf. also Orozco y Berra, *Geografia de las Lenguas de México*, p. 101.

[12] *Die Mayahandschrift der königlichen öffentlichen Bibliothek zu Dresden; herausgegeben von E. Förstemann* (Leipzig, 1880). Only thirty copies were offered for sale at two hundred marks. There is a copy in Harvard College library. Parts of the manuscript are found figured in different publications: Humboldt's *Vues des Cordillères*, ii. 268, and pl. 16 and 45; Wuttke's *Gesch. der Schrift. Atlas*, pl. 22, 23 (Leipzig, 1872); *Archives de la Soc. Amér. de France*, n. s., vol. i. and ii.; Silvestre's *Paléographie Universelle*; Rosny's *Les Ecritures figuratives et hiéroglyphiques des peuples anciens et modernes* (Paris, 1860, pl. v.), and in his *Essai sur le déchiffrement*, etc.; Ruge, *Zeitalter der Entdeckungen*, p. 559. Cf. also Le Noir in *Antiquités Mexicaines*, ii. introd.; Förstemann's separate monographs, *Der Maya apparat in Dresden* (*Centralblatt für Bibliothekswesen*, 1885, p. 182), and *Erläuterungen zur Mayahandschrift der königlichen öffentlichen Bibliothek zu Dresden* (Dresden, 1886); Schellhas' *Die Maya-Handschrift zu Dresden* (Berlin, 1886); C. Thomas on the numerical signs in *Arch. de la Soc. Am. de France*, n. s., iii. 207.

[13] Cf. Powell's *Third Rept. Eth. Bureau*, p. 32.

[14] Brinton's *Maya Chronicles*, 66; Brasseur de Bourbourg's *Troano* (1868).

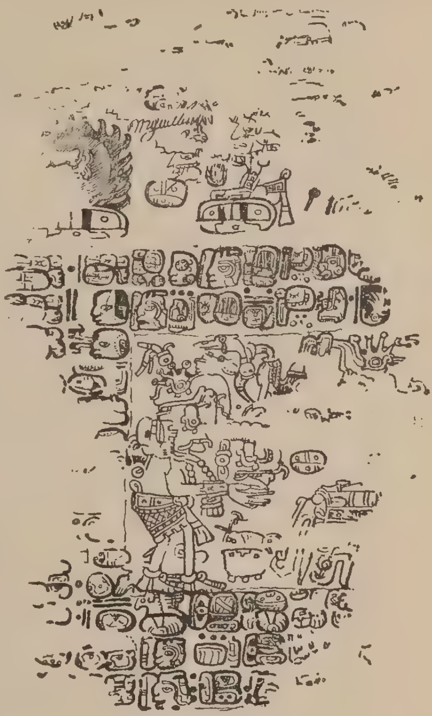


CODEX CORTESIANUS.*

* From a fac-simile in the *Archives de la Société Américaine de France, nouv. ser.*, ii. 30.

e Bourbourg, who was instrumental in its recognition about 1865 or 1866, and who edited a sumptuous two-olume folio edition with chromo-lithographic plates.[1]

While Léon de Rosny was preparing his *Essai ır le déchiffrement de l'Ecriture hiératique* 876), a Maya manuscript was offered to the ibliothèque Impériale in Paris and declined, be- use the price demanded was too high. Photo- aphic copies of two of its leaves had been sub- itted, and one of these is given by Rosny in the *ssai* (pl. xi.). The Spanish government finally ought the MS., which, because it was supposed have once belonged to Cortes, is now known as e *Codex Cortesianus.* Rosny afterwards saw and studied it in the Museo Archeológico at adrid, as he makes known in his *Doc. Ecrits la Antiq. Amér.*, p. 79, where he points out e complementary character of one of its leaves ith another of the MS. Troano, showing them belong together, and gives photographs of the vo (pl. v. vi.), as well as of other leaves (pl. 8 and . The part of this codex of a calendar character Tableau des Bacab) is reproduced from Rosny's late by Cyrus Thomas[2] in an essay in the *Third eport of the Bureau of Ethnology*, together ith an attempted restoration of the plate, which obscure in parts. Finally a small edition (85 opies) of the entire MS. was published at Paris 1883.[3]



CODEX PEREZIANUS.*

The last of the Maya MSS. recently brought light is sometimes cited as the *Codex Perezi- nus*, because the paper in which it was wrapped, hen recognized in 1859 by Rosny,[4] bore the ame "Perez"; and sometimes designated as odex Mexicanus, or Manuscrit Yucatèque No. of the National Library at Paris. It was a w years later published as *Manuscrit dit léxicain No. 2 de la Bibliothèque Impériale, hotographié par ordre de S. E. M. Duruy, inistre de l'instruction publique* (Paris, 1864, in folio, 50 copies). The original is a fragment of eleven aves, and Brasseur[5] speaks of it as the most beautiful of all the MSS. in execution, but the one which has ıffered the most from time and usage.[6]

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[1] It constitutes vol. ii. and iii. of the series.

Mission scientifique au Mexique et dans l'Amérique entrale. Ouvrages publiés par ordre de l'Empereur et ır les soins du Ministre de l'Instruction publique (Paris, 368–70), under the distinctive title: *Linguistique, Manus- rit Troano. Etudes sur le système graphique et la langue es Mayas, par Brasseur de Bourbourg* (1869–70).

Rosny, who compared Brasseur's edition with the orig- al, was satisfied with its exactness, except in the number- g of the leaves; and Brasseur (*Bibl. Mex.-Guat.*, 1871) onfessed that in his interpretation he had read the MS. ackwards. The work was reissued in Paris in 1872, with- ıt the plates, under the following title: *Dictionnaire, rammaire et Chrestomathie de la langue maya, précédés 'une étude sur les système graphique des indigènes du 'ucatan (Méxique)* (Paris, 1872).

Brasseur's *Rapport, addressé à son Excellence M. Duruy,* ıcluded in the work, gives briefly the abbé's exposition of ıe MS. Professor Cyrus Thomas and Dr. D. G. Brinton, aving printed some expositions in the *American Natu- ılist* (vol. xv.) united in an essay making vol. v. of the *Con- ributions to North American Ethnology* (Powell's survey) nder the title: *A Study of the Manuscript Troano by yrus Thomas, with an introduction by D G. Brinton* (Washington, 1882), which gives fac-similes of some of the plates. Thomas calls it a kind of religious calendar, giving dates of religious festivals through a long period, intermixed with illustrations of the habits and employments of the people, their houses, dress, utensils. He calls the characters in a measure phonetic, and not syllabic. Cf. Rosny in the *Archives de la Soc. Am. de France*, n. s., ii. 28; his *Essai sur le déchiffrement*, etc. (1876); Powell's *Third Rept. Bur. of Eth.*, xvi.; Bancroft's *Nat. Races*, ii. 774; and Brinton's *Notes on the Codex Troano and Maya Chronology* (Salem, 1881).

[2] Cf. *Science*, iii. 458.

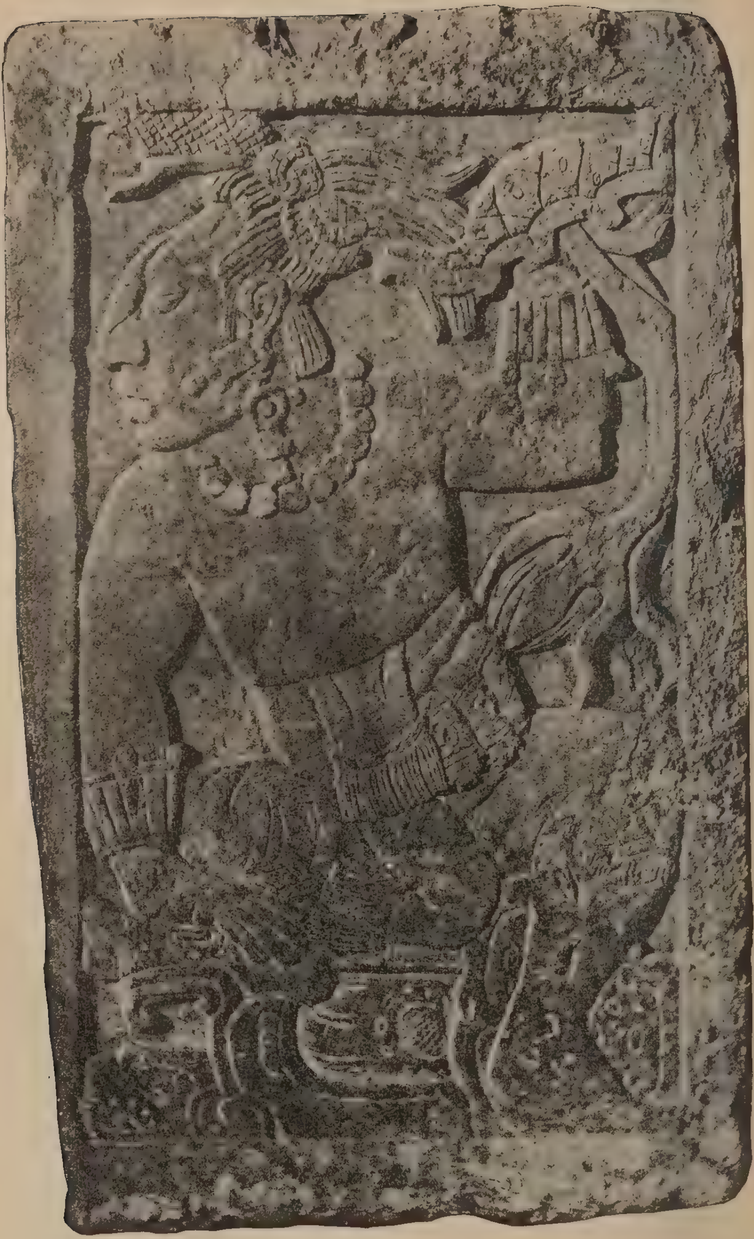
[3] *Codex Cortesianus. Manuscrit hiératique des anciens Indiens de l'Amérique centrale conservé au Musée archéologique de Madrid. Photographié et publié pour la première fois, avec une introduction, et un vocabulaire de l'écriture hiératique yucatèque par Léon de Rosny* (Paris, 1883). At the end is a list of works by De Rosny on American archæology and paleography.

[4] *Archives de la Soc. Am. de France*, n. s., ii. 25.

[5] *Bib. Mex.-Guat.*, p. 95.

[6] Cf. Rosny in *Archives paléographiques* (Paris, 1869–71), pl. 117, etc.; and his *Essai sur le déchiffrement*, etc., pl. viii., xvi.

* One of the leaves of a MS. No. 2, in the Bibliothèque Nationale, Paris, following the fac-simile (pl. 124) in Léon e Rosny's *Archives paléographiques* (Paris, 1869).



NOTE.—This Yucatan bas-relief follows a photograph by Rosny (1880), reproduced in the *Mém. de la Soc. d'Et* *graphie*, no. 3 (Paris, 1882).

CHAPTER IV.

THE INCA CIVILIZATION IN PERU.

BY CLEMENTS R. MARKHAM, C. B.

THE civilization of the Incas of Peru is the most important, because it is the highest, phase in the development of progress among the American races. It represents the combined efforts, during long periods, of several peoples who eventually became welded into one nation. The especial interest attaching to the study of this civilization consists in the fact that it was self-developed, and that, so far as can be ascertained, it received no aid and no impulse from foreign contact.

It is necessary, however, to bear in mind that the empire of the Incas, in its final development, was formed of several nations which had, during long periods, worked out their destinies apart from each other; and that one, at least, appears to have been entirely distinct from the Incas in race and language.[1] These facts must be carefully borne in mind in pursuing inquiries relating to the history of Inca civilization. It is also essential that the nature and value of the evidence on which conclusions must be based should be understood and carefully weighed. This evidence is of several kinds. Besides the testimony of Spanish writers who witnessed the conquest of Peru, or who lived a generation afterwards, there is the evidence derived from a study of the characteristics of descendants of the Inca people, of their languages and literature, and of their architectural and other remains. These various kinds of evidence must be compared, their respective values must be considered, and thus alone, in our time, can the nearest approximation to the truth be reached.

The testimony of writers in the sixteenth century, who had the advantage of being able to see the workings of Inca institutions, to examine the outcome of their civilization in all its branches, and to converse with the Incas themselves respecting the history and the traditions of their people, is the most important evidence. Much of this testimony has been preserved, but unfortunately a great deal is lost. The sack of Cadiz by the Earl of Essex, in 1595, was the occasion of the loss of Blas Valera's priceless work.[2] Other valuable writings have been left in manuscript, and have been mislaid through neglect and carelessness. Authors are mentioned, or even quoted, whose books have disappeared. The contemplation of the fallen Inca empire excited the curiosity and interest of a great number of intelligent

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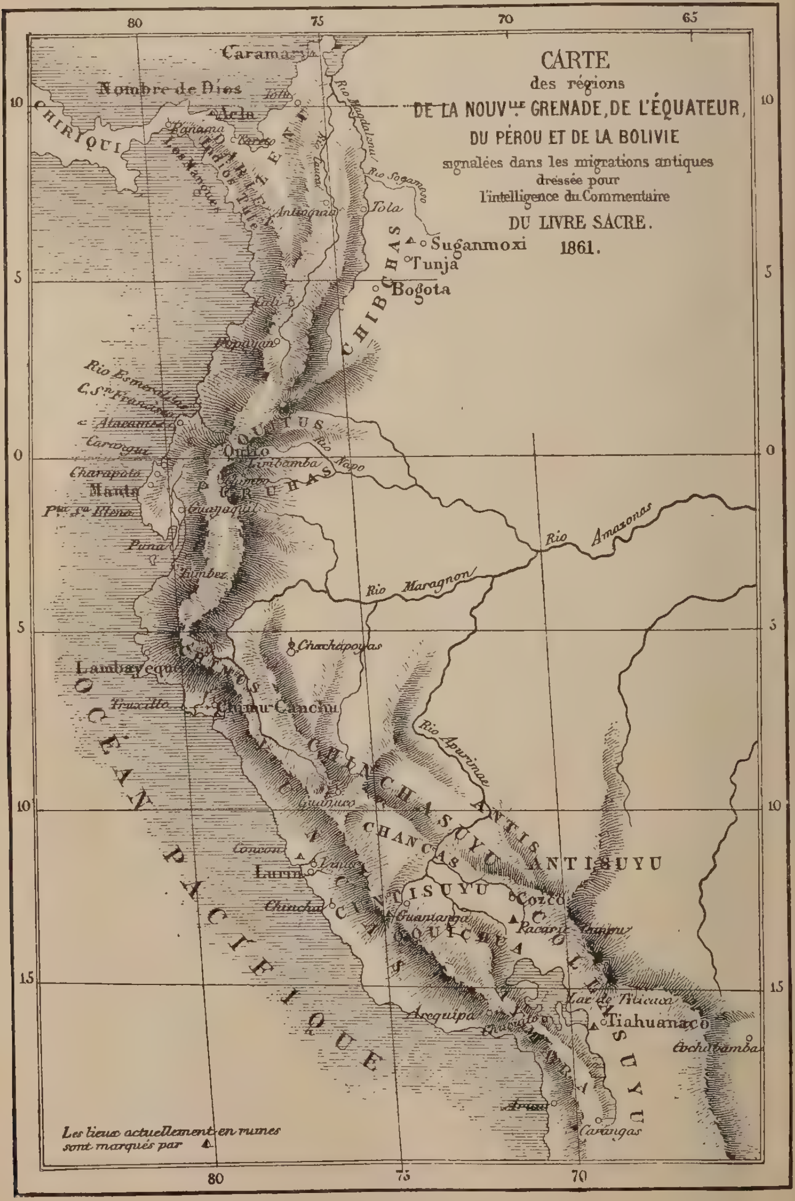
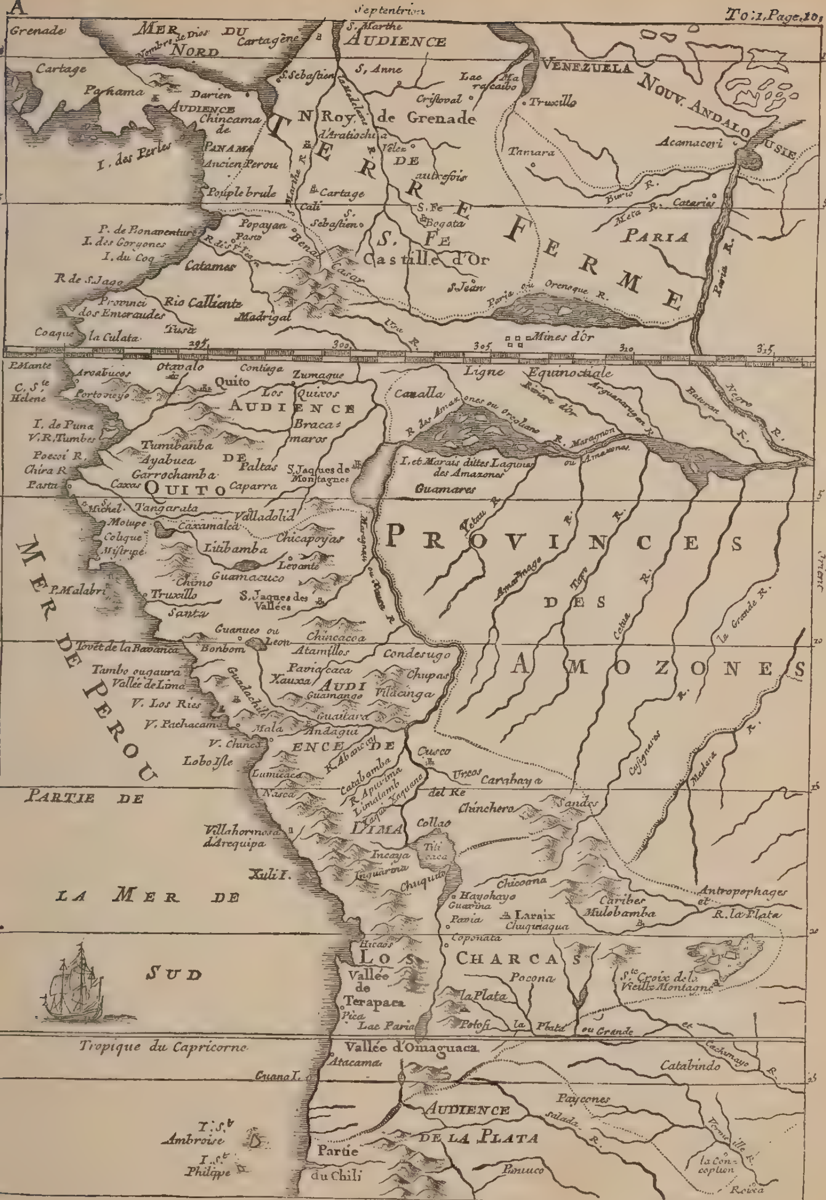
[1] [Mr. Markham made a special study of this point in the *Journal of the Roy. Geog. Soc.* (1871), xli. p. 281, collating its authorities. Cf. the views of Marcoy in *Travels in South America*, tr. by Rich, London, 1875. — ED.]

[2] Except those portions which Garcilasso de la Vega has embodied in his *Commentaries.*



MAP IN BRASSEUR'S POPUL VUH.



EARLY SPANISH MAP OF PERU.*

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* [From the Paris (1774) edition of Zarate. The development of Peruvian cartography under the Spanish plorations is traced in a note in Vol. II. p. 509; but the best map for the student is a map of the empire of e Incas, showing all except the provinces of Quito and Chili, with the routes of the successive Inca conerors marked on it, given in the *Journal of the Roy. Geog. Soc.* (1872), vol. xlii. p. 513, compiled by Mr. relawny Saunders to illustrate Mr. Markham's paper of the previous year, on the empire of the Incas. The ap was republished by the Hakluyt Society in 1880. The map of Wiener in his *Pérou et Bolivie* is also a ood one. Cf. Squier's map in his *Peru.* — Ed.]

men among the Spanish conquerors. Many wrote narratives of what they saw and heard. A few studied the language and traditions of the people with close attention. And these authors were not confined to the clerical and legal professions; they included several of the soldier-conquerors themselves.[1]

The nature of the country and climate was a potent agent in forming the character of the people, and in enabling them to make advances in civilization. In the dense forests of the Amazonian valleys, in the boundless prairies and savannas, we only meet with wandering tribes of hunters and fishers. It is on the lofty plateaux of the Andes, where extensive tracts of land are adapted for tillage, or in the comparatively temperate valleys of the western coast, that we find nations advanced in civilization.[2]

The region comprised in the empire of the Incas during its greatest extension is bounded on the east by the forest-covered Amazonian plains, on the west by the Pacific Ocean, and its length along the line of the Cordilleras was upwards of 1,500 miles, from 2° N. to 20° S. This vast tract comprises every temperature and every variety of physical feature. The inhabitants of the plains and valleys of the Andes enjoyed a temperate and generally bracing climate, and their energies were called forth by the physical difficulties which had to be overcome through their skill and hardihood. Such a region was suited for the gradual development of a vigorous race, capable of reaching to a high state of culture. The different valleys and plateaux are separated by lofty mountain chains or by profound gorges, so that the inhabitants would, in the earliest period of their history, make their own slow progress in comparative isolation, and would have little intercommunication. When at last they were brought together as one people, and thus combined their efforts in forming one system, it is likely that such a union would have a tendency to be of long duration, owing to the great difficulties which must have been overcome in its creation. On the other hand, if, in course of time, disintegration once began, it might last long, and great efforts would be required to build up another united empire. The evidence seems to point to the recurrence of these processes more than once, in the course of ages, and to their commencement in a very remote antiquity.

One strong piece of evidence pointing to the great length of time during which the Inca nations had been a settled and partially civilized race, is to be found in the plants that had been brought under cultivation, and in the animals that had been domesticated. Maize is unknown in a wild state,[3] and many centuries must have elapsed before the Peruvians could have produced numerous cultivated varieties, and have brought the plant to such a high state of perfection. The peculiar edible roots, called *oca* and *aracacha,* also exist only as cultivated plants. There is no wild variety of the *chirimoya,* and the Peruvian species of the cotton plant is known only under cultivation.[1] The potato is found wild in Chile, and probably in Peru, as a very insignificant tuber. But the Peruvians, after cultivating it for centuries, increased its size and produced a great number of edible varieties.[2] Another proof of the great antiquity of Peruvian civilization is to be found in the llama and alpaca, which are domesticated animals, with individuals varying in color: the one a beast of burden yielding coarse wool, and the other bearing a thick fleece of the softest silken fibres. Their prototypes are the wild huanaco and vicuña, of uniform color, and untameable. Many centuries must have elapsed before the wild creatures of the Andean solitudes, with the habits of chamois, could have been converted into the Peruvian sheep which cannot exist apart from men.[3]

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[1] It is, of course, necessary to consider the weight to be attached to the statements of different authors; but the most convenient method of placing the subject before the reader will be to deal in the present chapter with general conclusions, and to discuss the comparative merits of the authorities in the Critical Essay on the sources of information.

[2] [For special study, see Paz Soldan's *Geografía del Peru*; Menendez' *Manual de Geografía del Peru*; and Wiener's *L'Empire des Incas*, ch. I. — ED.]

[3] "Jusqu'à present on n'a pas retrouvé le maïs, d'une manière certaine, a l'état sauvage" (De Candolle's *Géographie botanique raisonnée*, p. 951).

LLAMAS.*

These considerations point to so vast a period during which the existing race had dwelt in the Peruvian Andes, that any speculation respecting its origin would necessarily be futile in the present state of our knowledge.[4] The weight of tradition indicates the south as the quarter whence the people came whose descendants built the edifices at Tiahuanacu.

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[1] De Candolle, p. 983.

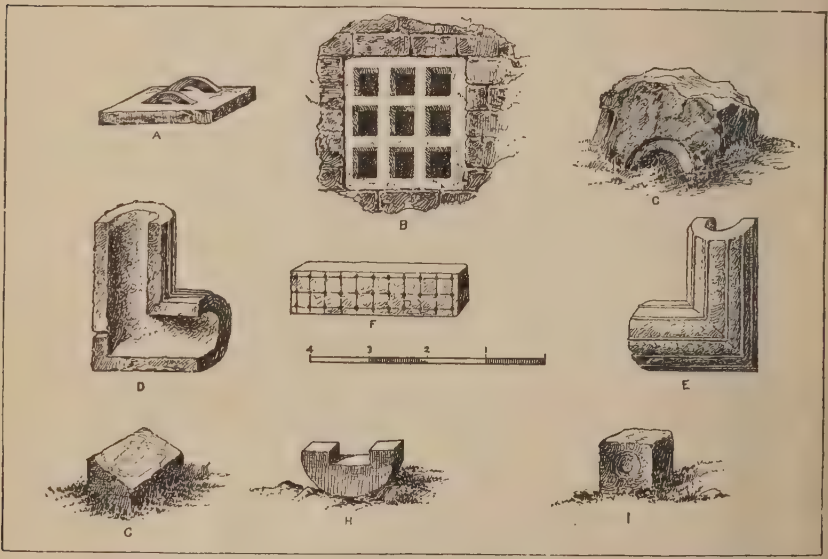
[2] There is a wild variety in Mexico, the size of a nut, and attempts have been made to increase its size under cultivation during many years, without any result. This seems to show that a great length of time must have elapsed before the ancient Peruvians could have brought the cultivation of the potato to such a high state of perfection as they undoubtedly did.

[3] Some years ago a priest named Cabrera, the cura of a village called Macusani, in the province of Caravaya, succeeded in breeding a cross between the wild vicuña and the tame alpaca. He had a flock of these beautiful animals, which yielded long, silken, white wool; but they required extreme care, and died out when the sustaining hand of Cabrera was no longer available. There is also a cross between a llama and an alpaca, called *guariso,* as large as the llama, but with much more wool. The guanaco and llama have also been known to form a cross; but there is no instance of a cross between the two wild varieties, — the guanaco and vicuña. The extremely artificial life of the alpaca, which renders that curious and valuable animal so absolutely dependent on the ministrations of its human master, and the complete domestication of the llama, certainly indicate the lapse of many centuries before such a change could have been effected.

[4] [Cf. remarks of Daniel Wilson in his *Prehistoric Man,* i. 243. — ED.]

* [One of the cuts which did service in the Antwerp edition of Cieza de Leon. Cf. Bollaert on the llama, alpaca, huanaco, and vicuña species in the *Sporting Review,* Feb., 1863; the cuts in Squier, pp. 246, 250; Dr. Van Tschudi, in the *Zeitschrift für Ethnologie,* 1885. — ED.]

The most ancient remains of a primitive people in the Peruvian Andes consist of rude *cromlechs*, or burial-places, which are met with in various localities. Don Modesto Basadre has described some by the roadside, in the descent from Umabamba to Charasani, in Bolivia. These cromlechs are formed of four great slabs of slate, each slab being about five feet high, four or five in width, and more than an inch thick. The four slabs are perfectly shaped and worked so as to fit into each other at the corners. A fifth slab is placed over them, and over the whole a pyramid of clay and rough stones is piled. These cromlechs are the early memorials of a race which was succeeded by the people who constructed the cyclopean edifices of the Andean plateaux.



DETAILS AT TIAHUANACU.*

For there is reason to believe that a powerful empire had existed in Peru centuries before the rise of the Inca dynasty. Cyclopean ruins, quite foreign to the genius of Inca architecture, point to this conclusion. The wide area over which they are found is an indication that the government which caused them to be built ruled over an extensive empire, while their cyclopean character is a proof that their projectors had an almost unlimited supply of labor. Religious myths and dynastic traditions throw some doubtful light on that remote past, which has left its silent memorials in the huge stones of Tiahuanacu, Sacsahuaman, and Ollantay, and in the altar of Concacha.

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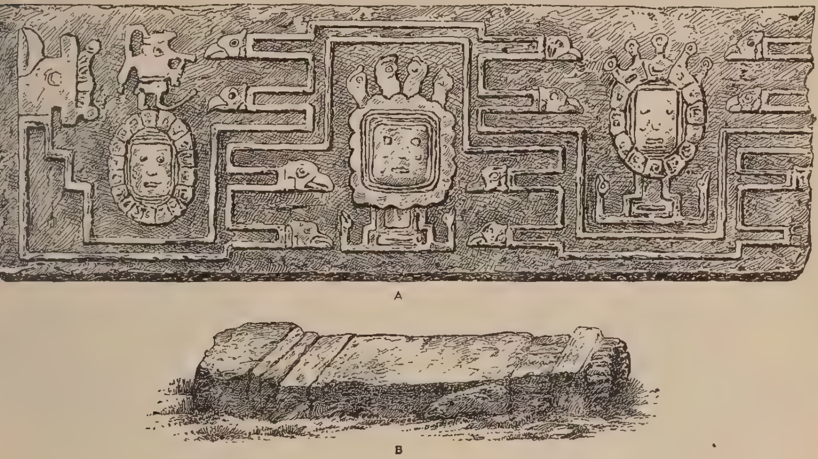
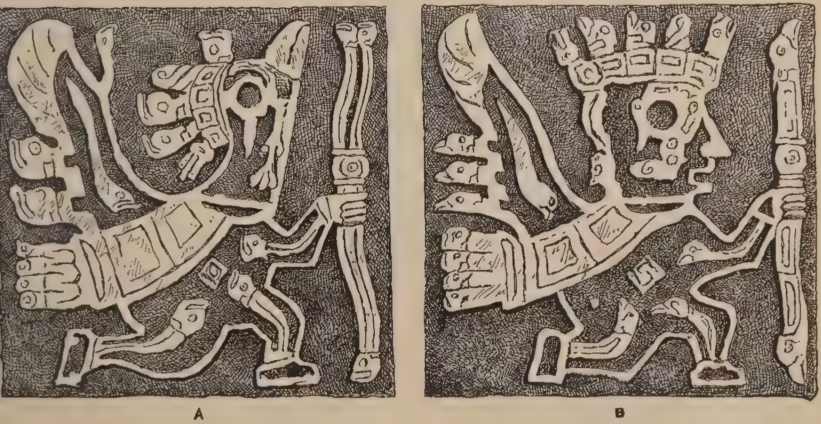
* Key:—A, Lid or cover of some aperture, of stone, with two handles neatly undercut. B, A window of trachyte, of careful workmanship, in one piece. C, Block of masonry with carving. D, E, Two views of a corner-piece to some stone conduit, carefully ornamented with projecting lines. F, G, H, I, Other pieces of cut masonry lying about.

The most interesting ruins in Peru are those of the palace or temple near the village of Tiahuanacu,[1] on the southern side of Lake Titicaca. They



CARVINGS AT TIAHUANACU.*



BAS-RELIEFS AT TIAHUANACU.†

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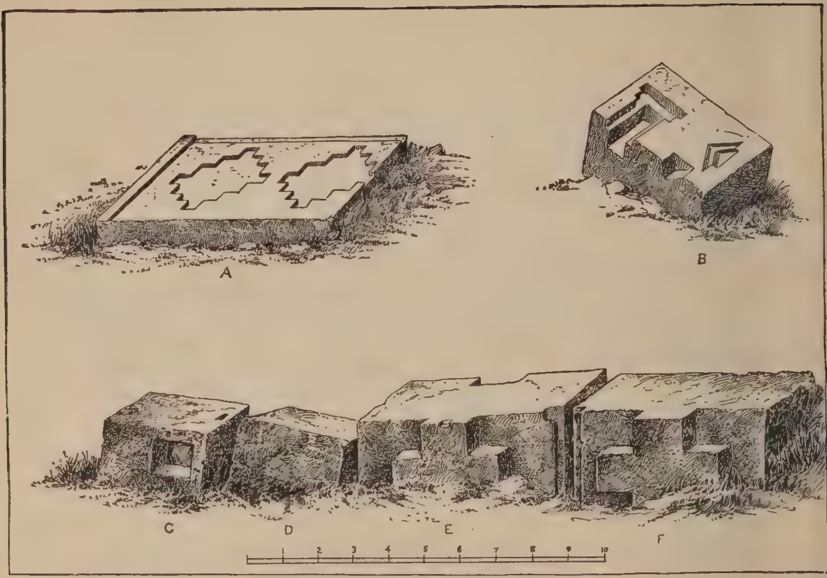
[1] The name is of later date. One story is that, when an Inca was encamped there, a messenger reached him with unusual celerity, whose speed was compared with that of the "*huanaco.*" The Inca said, "*Tia*" (sit or rest), "*O! huanaco.*"

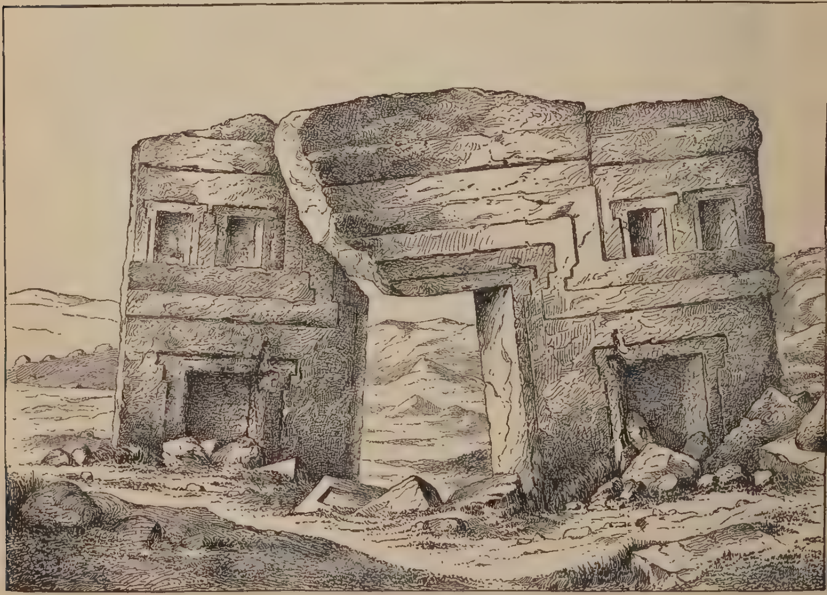
* KEY: — A, Portion of the ornament which runs along the base of the rows of figures on the monolithic doorway. B, Prostrate idol lying on its face near the ruins; about 9 feet long.

† KEY: — A, A winged human figure with the crowned head of a condor, from the central row on the monolithic doorway. B, A winged human figure with human head crowned, from the upper row on the monolithic doorway.

[There are well-executed cuts of these sculptures in Ruge's *Geschichte des Zeitalters der Entdeckungen*, pp. 430, 431. Cf. Squier's *Peru*, p. 292. — ED.]



FRAGMENTS AT TIAHUANACU.*



REVERSE OF THE DOORWAY AT TIAHUANACU.†

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* Various curiously carved stones found scattered about the ruins.

† [Cf. view in Squier's *Peru*, p. 289, with other particulars of the ruins, p. 276, etc. — Ed.]

ire 12,930 feet above the level of the sea, and 130 above that of the lake, vhich is about twelve miles off. They consist of a quadrangular space, en-ered by the famous monolithic doorway, and surrounded by large stones tanding on end; and of a hill or mound encircled by remains of a wall, onsisting of enormous blocks of stone. The whole covers an area about oo yards long by 350 broad. There is a lesser temple, about a quarter of

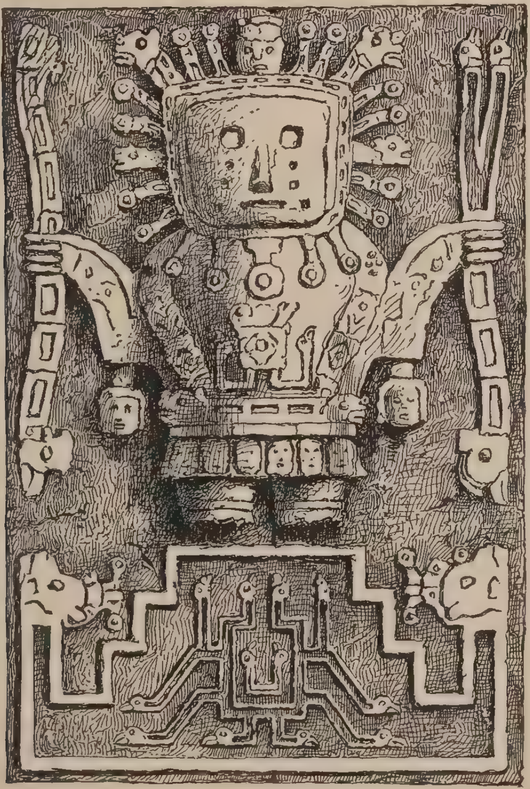

IMAGE AT TIAHUANACU.*

mile distant, containing stones 36 feet long by 7, and 26 by 16, with ecesses in them which have been compared to seats of judgment. The eight of the two great stones has been estimated at from 140 to 200 tons ach, and the distance of the quarries whence they could have been brought from 15 to 40 miles.

The monolithic portal is one block of hard trachytic rock, now deeply sunk in the ground. Its height above ground is 7 ft. 2 in., width 13 ft. 5 in., thickness 1 ft. 6 in., and the opening is 4 ft. 6 in. by 2 ft. 9 in. The outer side is ornamented by accurately cut niches and rectangular mouldings. The whole of the inner side, from a line level with the upper lintel of the doorway to the top, is a mass of sculpture, which speaks to us, in difficult riddles, alas! of the customs and art-culture, of the beliefs and traditions, of an ancient and lost civilization.

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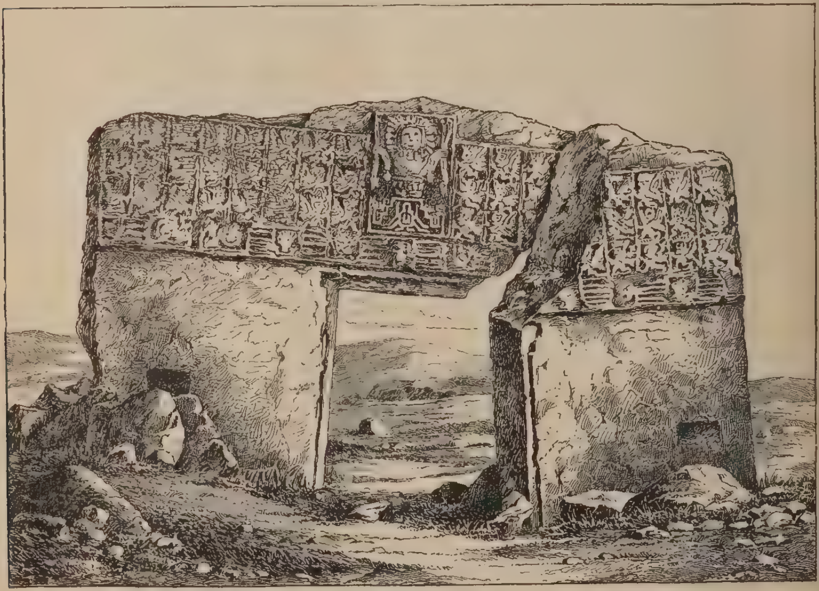
* [This is an enlarged drawing of the bas-relief shown in the picture of the broken doorway (p. 218). Cf. e cuts in the article on the ruins of Tiahuanacu in the *Revue d'Architecture des Travaux publics*, vol. xiv.; in Ch. Wiener's *L'Empire des Incas*, pl. iii.; in D'Orbigny's Atlas to his *L'Homme Américain;* and Squier's *Peru*, p. 291.— Ed.]

In the centre there is a figure carved in high relief, in an oblong compartment, 2 ft. 2 in. long by 1 ft. 6 in.[1] Squier describes this figure as angularly but boldly cut. The head is surrounded by rays, each terminating in a circle or the head of an animal. The breast is adorned with two serpents united by a square band. Another band, divided into ornamented compartments, passes round the neck, and the ends are brought down to the girdle, from which hang six human heads. Human heads also hang from the elbows, and the hands clasp sceptres which terminate in the heads of condors. The legs are cut off near the girdle, and below there are a series of frieze-like ornaments, each ending with a condor's head. On either side of this central sculpture there are three tiers of figures, 16 in



BROKEN MONOLITH DOORWAY AT TIAHUANACU.*

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[1] Basadre's measurement is 32 inches by 21.

* [An enlarged drawing of the image over the arch is given in another cut. This same ruin is well represented in Ruge's *Gesch. des Zeitalters der Entdeckungen;* and not so well in Wiener's *Pérou et Bolivie,* p. 419. Cf. Squier's *Peru*, p. 288. — Ed.]

ach tier, or 48 in all, each in a kneeling posture, and facing towards the rge central figure. Each figure is in a square, the sides of which measure ight inches. All are winged, and hold sceptres ending in condors' heads; ut while those in the upper and lower tiers have crowned human heads, those the central tier have the heads of condors. There is a profusion of orna-

TIAHUANACU RESTORED.*

ent on all these figures, consisting of heads of birds and fishes. An ornaental frieze runs along the base of the lowest tier of figures, consisting of n elaborate pattern of angular lines ending in condors' heads, with larger uman heads surrounded by rays, in the intervals of the pattern. Cieza de eon and Alcobasa[1] mention that, besides this sculpture over the doorway, here were richly carved statues at Tiahuanacu, which have since been detroyed, and many cylindrical pillars with capitals. The head of one statue, ith a peculiar head-dress, which is 3 ft. 6 in. long, still lies by the roadside.

The masonry of the ruins is admirably worked, according to the testiony of all visitors. Squier says: "The stone itself is a dark and exceedgly hard trachyte. It is faced with a precision that no skill can excel. ts lines are perfectly drawn, and its right angles turned with an accuracy hat the most careful geometer could not surpass. I do not believe there xists a better piece of stone-cutting, the material considered, on this or he other continent."

It is desirable to describe these ruins, and especially the sculpture over the monolithic doorway, with some minuteness, because, with the probable exception of the cromlechs, they are the most ancient, and, without any exception, the most interesting that have been met with in Peru. There is nothing elsewhere that at all resembles the sculpture on the monolithic doorway at Tiahuanacu.[1] The central figure, with rows of kneeling worshippers on either side, all covered with symbolic designs, represents, it may be conjectured, either the sovereign and his vassals, or, more probably, the Deity, with representatives of all the nations bowing down before him. The sculpture and the most ancient traditions should throw light upon each other.

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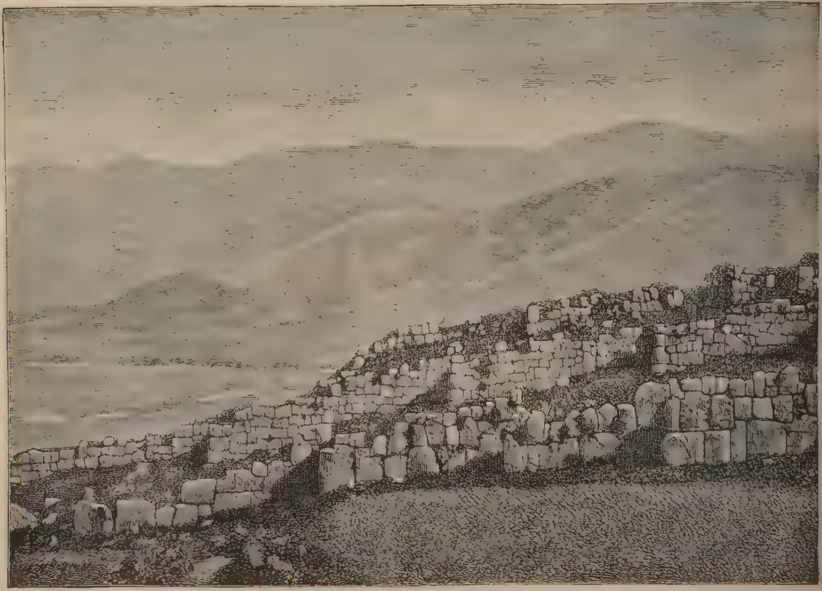
[1] Quoted by Garcilasso de la Vega, Pte. I. lib. III. cap. 1.

* After a drawing given in *The Temple of the Andes* by Richard Inwards (London, 1884).

Further north there are other examples of prehistoric cyclopean remains. Such is the great wall, with its "stone of 12 corners," in the Calle del Triunfo at Cuzco. Such is the famous fortress of Cuzco, on the Sacsahuaman Hill. Such, too, are portions of the ruins at Ollantay-tampu. Still farther north there are cyclopean ruins at Concacha, at Huiñaque, and at Huaraz.



RUINS OF SACSAHUAMAN.*

Tiahuanacu is interesting because it is possible that the elaborate character of its symbolic sculpture may throw glimmerings of light on remote istory; but Sacsahuaman, the fortress overlooking the city of Cuzco, is, ithout comparison, the grandest monument of an ancient civilization in e New World. Like the Pyramids and the Coliseum, it is imperishable. t consists of a fortified work 600 yards in length, built of gigantic stones, three lines, forming walls supporting terraces and parapets arranged in alient and retiring angles. This work defends the only assailable side of a osition which is impregnable, owing to the steepness of the ascent in all ther directions. The outer wall averages a height of 26 feet. Then there a terrace 16 yards across, whence the second wall rises to 18 feet. The econd terrace is six yards across, and the third wall averages a height of 2 feet. The total height of the fortification is 56 feet. The stones are of lue limestone, of enormous size and irregular in shape, but fitted into each ther with rare precision. One of the stones is 27 feet high by 14, and tones 15 feet high by 12 are common throughout the work.

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[1] Basadre mentions a carved stone brought from the department of Ancachs, in Peru, which had some resemblances to the stones at Tiahuanacu. A copy of it is in possession of Señor Raimondi.

* [After a cut in Ruge's *Geschichte des Zeitalters der Entdeckungen.* Markham has elsewhere described these ruins, — *Cieza de Leon*, 259, 324; 2d part, 160; *Royal Commentaries of the Incas*, ii., with a plan, reproduced in Vol. II. p. 521, and another plan of Cuzco, showing the position of the fortress in its relations to the city. There are plans and views in Squier's *Peru*, ch. 23. — Ed.]

At Ollantay-tampu the ruins are of various styles, but the later works re raised on ancient cyclopean foundations.[1] There are six porphyry slabs 2 feet high by 6 or 7; stone beams 15 and 20 feet long; stairs and ecesses hewn out of the solid rock. Here, as at Tiahuanacu, there were, ccording to Cieza de Leon,[2] men and animals carved on the stones, but hey have disappeared. The same style of architecture, though only in ragments, is met with further north.

East of the river Apurimac, and not far from the town of Abancay, there re three groups of ancient monuments in a deep valley surrounded by ofty spurs of the Andes. There is a great cyclopean wall, a series of seats r thrones of various forms hewn out of the solid stone, and a huge block arved on five sides, called the *Rumi-huasi*. The northern face of this onolith is cut into the form of a staircase; on the east there are two enormous seats separated by thick partitions, and on the south there is a sort of ookout place, with a seat. Collecting channels traverse the block, and join renches or grooves leading to two deep excavations on the western side. n this western side there is also a series of steps, apparently for the fall f a cascade of water connected with the sacrificial rites. Molina gives a urious account of the water sacrifices of the Incas.[3] The *Rumi-huasi* seems o have been the centre of a great sanctuary, and to have been used as an ltar. Its surface is carved with animals amidst a labyrinth of cavities and artition ridges. Its length is 20 feet by 14 broad, and 12 feet high. Here e have, no doubt, a sacrificial altar of the ancient people, on which the lood of animals and libations of *chicha* flowed in torrents.[4]

Spanish writers received statements from the Indians that one or other f these cyclopean ruins was built by some particular Inca. Garcilasso de a Vega even names the architects of the Cuzco fortress. But it is clear rom the evidence of the most careful investigators, such as Cieza de Leon, that there was no real knowledge of their origin, and that memory of the builders was either quite lost, or preserved in vague, uncertain traditions.

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[1] [Cf. plans and views in Squier's *Peru*, ch. 4.—Ed.]

[2] Cap. 94.

[3] See page 238.

[4] The name of the place where these remains are situated is Concacha, from the Quichua word "*Cuncachay*,"—the act of holding down a victim for sacrifice; literally, "to take by the neck."

The most ancient myth points to the region of Lake Titicaca as the scene of the creative operations of a Deity, or miracle-working Lord.[1] This Deity is said to have created the sun, moon, and stars, or to have caused them to rise out of Lake Titicaca. He also created men of stone at Tiahuanacu, or of clay; making them pass under the earth, and appear again out of caves, tree-trunks, rocks, or fountains in the different provinces which were to be peopled by their descendants. But this seems to be a later attempt to reconcile the ancient Titicaca myth with the local worship of natural objects as ancestors or founders of their race, among the numerous subjugated tribes; as well as to account for the colossal statues of unknown origin at Tiahuanacu. There are variations of the story, but there is general concurrence in the main points: that the Deity created the heavenly bodies and the human race, and that the ancient people, or their rulers, were called *Pirua*. Tradition also seems to point to regions south of the lake as the quarter whence the first settlers came who worked out the earliest civilization.[2] We may, in accordance with all the indications that are left to us, connect the great god *Illa Ticsi* with the central figure of the Tiahuanacu sculpture, and the kneeling worshippers with the rulers of all the nations and tribes which had been subjugated by the *Hatun-runa*,[3] — the great men who had Pirua for their king, and who originally came from the distant south. The Piruas governed a vast empire, erected imperishable cyclopean edifices, and developed a complicated civilization, which is dimly indicated to us by the numerous symbolical sculptures on the monolith. They so, in a long course of years, brought wild plants under cultivation, and omesticated the animals of the lofty Andean plateau. But it is remarkable hat the shores of Lake Titicaca, which are almost treeless, and where corn ill not ripen, should have been chosen as the centre of this most ancient ivilization. Yet the ruins of Tiahuanacu conclusively establish the fact hat the capital of the Piruas was on the loftiest site ever selected for the eat of a great empire.

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[1] The names of this god were *Con-Illa-Tici-Uiracocha*, and he was the *Pachayachachic*, or Teacher of the World. *Pacha* is "time," or "place;" also "the universe." "*Yachachic*," a teacher, from "*Yachachini*," "I teach." *Con* is said to signify the creating Deity (*Betanzos, Garcia*). According to Gomara, Con was a creative deity who came from the north, afterwards expelled by Pachacamac, and a modern authority (Lopez, p. 235) suggests that *Con* represented the "cult of the setting sun," because *Cunti* means the west. *Tici* means a founder or foundation, and *Illa* is light, from *Illani*, "I shine:" "The Origin of Light" (*Montesinos. Anonymous Jesuit.* Lopez suggests "*Ati*," an evil omen, — the Moon God); or, according to one authority, "Light Eternal" (*The anonymous Jesuit*). *Vira* is a corruption of *Pirua*, which is said by some authorities to be the name of the first settler, or the founder of a dynasty; and by others to mean a "depository," a "place of abode;" hence a "dweller," or "abider." *Cocha* means "ocean," "abyss," "profundity," "space." *Uiracocha*, "the Dweller in Space." So that the whole would signify "God: the Creator of Light:" "the Dweller in Space: the Teacher of the World."

Some authors gave the meaning of *Uiracocha* to be "foam of the sea:" from *Uira* (*Huira*), "grease," or "foam," and *Cocha*, "ocean," "sea," "lake." Garcilasso de la Vega pointed out the error. In compound words of a nominative and genitive, the genitive is invariably placed first in Quichua; so that the meaning would be "a sea of grease," not "grease of the sea." Hence he concludes that *Uiracocha* is not a compound word, but simply a name, the derivation of which he does not attempt to explain. Blas Valera says that it means "the will and power of God;" not that this is the signification of the word, but that such were the godlike attributes of the being who was known by it. Acosta says that to *Ticsi Uiracocha* they assigned the chief power and command over all things. The anonymous Jesuit tells us that *Illa Ticsi* was the original name, and that *Uiracocha* was added later.

Of these names, *Illa Ticci* appears to have been the most ancient.

[2] Cieza de Leon and Salcamayhua.

[3] Montesinos calls the ancient people, who were peaceful and industrious, *Hatu-runa*, or "Great men." See also Matienza (MS. Brit. Mus.).

The Amautas, or learned men of the later Inca period, preserved the ames of sovereigns of the Pirua dynasty, commencing with Pirua Manco, nd continuing for sixty-five generations. Lopez conjectures that there vas a change of dynasty after the eighteenth Pirua king, because hitherto Montesinos, who has recorded the list, had always called each successor *son* nd heir, but after the eighteenth only heir. Hence he thinks that a new ynasty of Amautas, or kings of the learned caste, succeeded the Piruas. The only deeds recorded of this long line of kings are their success in epelling invasions and their alterations of the calendar. At length there ppears to have been a general disruption of the empire: Cuzco was nearly eserted, rebel leaders rose up in all directions, the various tribes became ndependent, and the chief who claimed to be the representative of the old ynasties was reduced to a small territory to the south of Cuzco, in the alley of the Vilcamayu, and was called "King of Tampu Tocco." This tate of disintegration is said to have continued for twenty-eight generaions, at the end of which time a new empire began to be consolidated unler the Incas, which inherited the civilization and traditions of the ancient dynasties, and succeeded to their power and dominion.

It was long believed that the lists of kings of the earlier dynasties rested olely on the authority of Montesinos, and they consequently received little credit. But recent research has brought to light the work of another writer, who studied before Montesinos, and who incidentally refers to two of the overeigns in his lists.[1] This furnishes independent evidence that the atalogues of early kings had been preserved orally or by means of *quipus*, nd that they were in existence when the Spaniards conquered Peru; thus giving weight to the testimony of Montesinos.

The second myth of the Peruvians refers to the origin of the Incas, who derived their descent from the kings of Tampu Tocco, and had their original home at Paccari-tampu, in the valley of the Vilcamayu, south of Cuzco. It s, therefore, an ancestral myth. It is related that four brothers, with their four sisters, issued forth from apertures (*Tocco*) in a cave at Paccari-tampu, a name which means "the abode of dawn." The brothers were called Ayar Manco, Ayar Cachi, Ayar Uchu, and Ayar Sauca, names to which the Incas, in the time of Garcilasso de la Vega, gave a fanciful meaning.[2] One of the brothers showed extraordinary prowess in hurling a stone from a sling. The others became jealous, and, persuading Ayar Auca, the expert slingsman, to return into the cave, they blocked the entrance with rocks. Ayar Uchu was converted into a stone idol, on the summit of a hill near Cuzco, called Huanacauri. Manco then advanced to Cuzco with his youngest brother, and found that the place was occupied by a chief named Alcaviza and his people. Here Manco established the seat of his government, and the Alcaviza tribe appears to have submitted to him, and to have lived side by side with the Incas for some generations. The Huanacauri hill was considered the most sacred place in Peru; while the *Tampu-tocco*, or cave at Paccari-tampu, was, through the piety of descendants, faced with a masonry wall, having three windows lined with plates of gold.

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[1] *The anonymous Jesuit*, p. 178. A work referred to by Oliva as having been written by Blas Valera also mentions some of the early kings by name. (See Saldamando, *Jesuitas del Peru*, p. 22.)

[2] *Cachi* ("salt") was the Inca's instruction in rational life, *Uchu* ("pepper") was the delight the people derived from this teaching, and *Sauca* ("joy") means the happiness afterwards experienced.

There is a third myth which seems to connect the ancient tradition of Titicaca with the ancestral myth of the Incas. It is said that long after the creation by the Deity, a great and beneficent being appeared at Tiahuanacu, who divided the world among four kings: Manco Ccapac, Colla, Tocay [1] or Tocapo,[2] and Pinahua.[3] The names Tuapaca,[4] Arnauan,[4] Tonapa,[5] and Tarapaca[5] occur in connection with this being, while some authorities tell us that his name was unknown. Betanzos says that he went from Titicaca to Cuzco, where he set up a chief named Alcaviza, and that he advanced through the country until he disappeared over the sea at Puerto Viejo. It is also related that the people of Canas attacked him, but were converted by a miracle, and that they built a great temple, with an image, at Cacha, in honor of this being, or of his god Illa Ticsi Uiracocha. This temple now forms a ruin which in its structure and arrangement is unique in Peru, and therefore deserves special attention.

The ruins of the temple of Cacha are in the valley of the Vilca-mayu, south of Cuzco. They were described by Garcilasso de la Vega, and have been visited and carefully examined by Squier. The main temple was 330 feet long by 87 broad, with wrought-stone walls and a steep pitched roof. A high wall extended longitudinally through the centre of the structure, consisting of a wrought-stone foundation, 8 feet high and 5½ feet thick on the level of the ground, supporting an adobe superstructure, the whole being 40 feet high. This wall was pierced by 12 lofty doorways, 14 feet high. But midway there are sockets for the reception of beams, showing the existence of a second story, as described by Garcilasso. Between the transverse and outer walls there were two series of pillars, 12 on each side, built like the transverse wall, with 8 feet of wrought stone, and completed to a height of 22 feet with adobes. These pillars appear to have supported the second floor, where, according to Garcilasso, there was a shrine containing the statue of Uiracocha. At right angles to the temple, Squier discovered the remains of a series of supplemental edifices surrounding courts, and built upon a terrace 260 yards long.

[1] G. de la Vega.

[2] Molina, p. 7.

[3] Pirua?

[4] Cieza de Leon; Herrera.

[5] Salcamayhua.

The peculiarities of the temple of Cacha consist in the use of rows of columns to support a second floor, and in the great height of the walls. In these respects it is unique, and if similar edifices ever existed, they appear to have been destroyed previous to the rise of the Inca empire. The Cacha temple belongs neither to the cyclopean period of the Piruas nor to the Inca style of architecture. Connected with the strange myth of the wandering prophet of Viracocha, it stands by itself, as one of those unsolved problems which await future investigation. The statue in the shrine on the upper story is described by Cieza de Leon, who saw it.

Both the Titicaca and the Cacha myths have, in later times, been connected and more or less amalgamated with the ancestral myth of the Incas. Thus Garcilasso de la Vega makes Manco Ccapac come direct from Titicaca; while Molina refers to him as one of the beings created there, who went down through the earth and came up at Paccari-tampu. Salcamayhua makes the being Tonapa, of the Cacha myth, arrive at Apu Tampu, or Paccari-tampu, and leave a sacred sceptre there, called *tupac yauri*, for Manco Ccapac. These are later interpolations, made with the object of connecting the family myth of the Incas with more ancient traditions. The wise men of the Inca system, through the care of Spanish writers of the time of the conquest, have handed down these three traditions and the catalogue of kings. The Titicaca myth tells us of the Deity worshipped by the builders of Tiahuanacu, and the story of the creation. The Cacha myth has reference to some great reformer of very ancient times. The Paccari-tampu myth records the origin of the Inca dynasty. Although they are overlaid with fables and miraculous occurrences, the main facts touching the original home of Manco Ccapac and his march to Cuzco are probably historical.

The catalogue of kings given by Montesinos, allowing an average of twenty years for each, would place the commencement of the Pirua dynasty in about 470 B. C.; in the days when the Greeks, under Cimon, were defeating the Persians, and nearly a century after the death of Sakya Muni in India. This early empire flourished for about 1,200 years, and the disruption took place in 830 A. D., in the days of King Egbert. The disintegration continued for 500 years, and the rise of the Incas under Manco was probably coeval with the days of St. Louis and Henry III of England.[1] By that time the country had been broken up into separate tribes for 500 years, and the work of reunion, so splendidly achieved by the Incas, was most arduous. At the same time, the ancient civilization of the Piruas was partially inherited by the various peoples whose ancestors composed their empire; so that the Inca civilization was a revival rather than a creation.

The various tribes and nations of the Andes, separated from each other by uninhabited wildernesses and lofty mountain chains, were clearly of the same origin, speaking dialects of the same language. Since the fall of the

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[1] Blas Valera allows a period of 600 years for the existence of the Inca dynasty, which throws its origin back to the days of Alfred the Great. Garcilasso allows 400 years, which would make its rise to be contemporary with Henry II of England. But twelve generations, allowing twenty-five years for each, would only occupy 300 years.

Piruas they had led an independent existence. Some had formed powerful confederations, others were isolated in their valleys. But it was only through much hard fighting and by consummate statesmanship that the one small Inca lineage established, in a period of less than three centuries, imperial dominion over the rest. It will be well, in this place, to take a brief survey of the different nations which were to form the empire of the Incas, and of their territories.

The central Andean region, which was the home of the imperial race of Incas, extends from the water-parting between the sources of the Ucayali and the basin of Lake Titicaca to the river Apurimac. It includes wild mountain fastnesses, wide expanses of upland, grassy slopes, lofty valleys such as that in which the city of Cuzco is built, and fertile ravines, with the most lovely scenery. The inhabitants composed four tribes : that of the Incas in the valley of the Vilcamayu, of the Quichuas in the secluded ravines of the Apurimac tributaries, and those of the Canas and Cauchis in the mountains bordering on the Titicaca basin. These people average a height of 5 ft. 4 in., and are strongly built. The nose is invariably aquiline, the mouth rather large ; the eyes black or deep brown, bright, and generally deep set, with long fine lashes. The hair is abundant and long, fine, and of a deep black-brown. The men have no beards. The skin is very smooth and soft, and of a light coppery-brown color, the neck thick, and the shoulders broad, with great depth of chest. The legs are well formed, feet and hands very small. The Incas have the build and physique of mountaineers.

To the south of this cradle of the Inca race extended the region of the Collas[1] and allied tribes, including the whole basin of Lake Titicaca, which is 12,000 feet above the level of the sea. The Collas dwelt in stone huts, tended their flocks of llamas, and raised crops of ocas, quinoas, and potatoes. They were divided into several tribes, and were engaged in constant feuds, their arms being slings and *ayllos*, or bolas. The Collas are remarkable for great length of body compared with the thigh and leg, and they are the only people whose thighs are shorter than their legs. Their build fits them for excellence in mountain climbing and pedestrianism, and for the exercise of extraordinary endurance.[2] The homes of the Collas were around the seat of ancient civilization at Tiahuanacu.

A remarkable race, apart from the Incas and Collas, of darker complexion and more savage habits, dwelt and still dwell among the vast beds of reeds in the southwestern angle of Lake Titicaca. They are called Urus, and are probably descendants of an aboriginal people who occupied the Titicaca basin before the arrival of the Hatun-runas from the south. The Urus spoke a distinct language, called *Puquina*, specimens of which have been

[1] Erroneously called *Aymaras* by the Spaniards. The name, which really belongs to a branch of the Quichua tribe, was first misapplied to the Colla language by the Jesuits at Juli, and afterwards to the whole Colla race.

[2] Don Modesto Basadre tells us that he sent an Indian messenger, named Alejo Vilca, from Puno to Tacna, a distance of 84 leagues, who did it in 62 hours, his only sustenance being a little dried maize and coca, — over four miles an hour for 252 miles.

preserved by Bishop Oré.[1] The ancestors of the Urus may have been the cromlech builders, driven into the fastnesses of the lake when their country was occupied by the more powerful invaders, who erected the imperishable monuments at Tiahuanacu. These Urus are now lake-dwellers. Their homes consist of large canoes, made of the tough reeds which cover the shallow parts of the lake, and they live on fish, and on quinua and potatoes, which they obtain by barter.

North of Cuzco there were several allied tribes, resembling the Incas in physique and language, in a similar stage of civilization, and their rivals in power. Beyond the Apurimac, and inhabiting the valleys of the Andes thence to the Mantaro, was the important nation of the Chancas; and still further north and west, in the valley of the Xauxa, was the Huanca nation. Agricultural people and shepherds, forming *ayllus*, or tribes of the Chancas and Huancas, occupied the ravines of the maritime cordillera, and extended their settlements into several valleys of the seacoast, between the Rimac and Nasca. These coast people of Inca race, known as Chinchas, held their own against an entirely different nation, of distinct origin and language, who occupied the northern coast valleys from the Rimac to Payta, and also the great valley of Huarca (the modern Cañete), where they had Chincha enemies both to the north and south of them. These people were called *Yuncas* by their Inca conquerors. Their own name was Chimu, and the language spoken by them was called *Mochica*. But this question relating to the early inhabitants of the coast valleys of Peru, their origin and civilization, is the most difficult in ancient Peruvian history, and will require separate consideration.[2]

North of the Huanca nation, along the basin of the Marañon, there were tribes which were known to the Incas by their head-dresses. These were the Conchucus, Huamachucus, and Huacrachucus.[3] Still further north, in the region of the equator, was the powerful nation of Quitus.

All these nations of the Peruvian Andes appear to have once formed part of the mighty prehistoric empire of the Pirhuas, and to have retained much of the civilization of their ancestors during the subsequent centuries of separate existence and isolation. This probably accounts for the ease with which the Incas established their system of religion and government throughout their new empire, after the conquests were completed. The subjugated nations spoke dialects of the same language, and inherited many of the usages and ideas of their conquerors. For the same reason they were pretty equally matched as foes, and the Incas secured the mastery only by dint of desperate fighting and great political sagacity. But finally they did establish their superiority, and founded a second great empire in Peru.

The history of the rise and progress of Inca power, as recorded by native historians in their *quipus*, and retailed to us by Spanish writers, is, on the whole, coherent and intelligible. Many blunders were inevitable in conveying the information from the mouths of natives to the Spanish inquirers, who understood the language imperfectly, and whose objects often were to reach foregone conclusions. But certain broad historical facts are brought out by a comparison of the different authorities, the succession of the last ten sovereigns is determined by a nearly complete consensus of evidence, and we can now relate the general features of the rise of Inca ascendency in Peru with a certain amount of confidence.

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[1] Fray Ludovico Geronimo de Oré, a native of Guamanga, in Peru, was the author of *Rituale seu Manuale ac brevem formam administrandi sacramenta juxta ordinem S. Ecclesiæ Romanæ, cum translationibus in linguas provinciarum Peruanorum*, published at Naples in 1607.

[2] Cf. Note I, following this chapter.

[3] *Chucu* means a head-dress; *Huaman*, a falcon; *Huacra*, a horn.

INCA MANCO CCAPAC.*

The Inca people were divided into small *ayllus*, or lineages, when Manco Ccapac advanced down the valley of the Vilcamayu, from Paccari-tampu, and forced the *ayllu* of Alcaviza and the *ayllu* of Antasayac to submit to his sway. He formed the nucleus of his power at Cuzco, the land of these conquered *ayllus*, and from this point his descendants slowly extended their dominion. The chiefs of the surrounding *ayllus*, called *Sinchi* (literally, "strong"), either submitted willingly to the Incas, or were subjugated. Sinchi Rocca, the son, and Lloque Yupanqui, the grandson, of Manco, filled up a swamp on the site of the present cathedral of Cuzco, planned out the

INCA YUPANQUI.†

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* [After a cut in Marcoy's *South America*, i. 210 (also in *Tour du Monde*, 1863, p. 261), purporting to b drawn from a copy of the taffeta roll containing the pedigree of the Incas, which, in evidence of their claims was sent by their descendants to the Spanish king in 1603. This genealogical record contained the likenesse of the successive Incas and their wives, and the original is said to have disappeared. Mr. Markham suppose this roll to have been the original of the portraits given in Herrera (see cut on p. 267 of the present volume) but they are not the same, if Marcoy's cuts are trustworthy. A set of likenesses appeared in Ulloa's *Relacio Histórica* (Madrid, 1748), iv. 604; and these were the originals of the series copied in the *Gentleman's Mag.* 1751–1752, and thence are copied those in Ranking. These do not correspond with those given by Marcoy See *post*, Vol. II., for a note on different series of portraits, and in the same volume, pp. 515, 516, are portrait of Atahualpa. A portrait of Manco Inca, killed 1546, is given in A. de Beauchamp's *Histoire de la Conquêt du Pérou* (Paris, 1808). — Ed.]

† [After a cut in Marcoy, i. 214. — Ed.]

city,[1] and their reigns were mainly occupied in consolidating the small kingdom founded by their predecessor. Mayta Ccapac, the fourth Inca, was also occupied in consolidating his power round Cuzco; but his son, Ccapac Yupanqui, subdued the Quichuas to the westward, and extended his sway as far as the pass of Vilcañota, overlooking the Collao, or basin of Lake Titicaca. Inca Rocca, the next sovereign, made few conquests, devoting his attention to the foundation of schools, the organization of festivals and administrative government, and to the construction of public works. His son, named Yahuar-huaccac, appears to have been unfortunate. One authority says that he was surprised and killed, and all agree that his reign was disastrous. For seven generations the power and the admirable internal polity of the Incarial government had been gradually organized and consolidated within a limited area. The succeeding sovereigns were great conquerors, and their empire was rapidly extended to the vast area which it had reached when the Spaniards first appeared on the scene.

CUZCO.*

The son of Yahuar-huaccac assumed the name of the Deity, and called himself Uira-cocha.[2] Intervening in a war between the two principal chiefs of the Collas, named Cari and Zapaña, Uira-cocha defeated them in detail, and annexed the whole basin of Lake Titicaca to his dominions. He also conquered the lovely valley of Yucay, on the lower course of the Vilcamayu, whither he retired to end his days. The eldest son of Uira-cocha, named Urco, was incompetent or unworthy, and was either obliged to abdicate[3] in favor of his brother Yupanqui, the favorite hero of Inca history, or was slain.[4] It was a moment when the rising empire needed the services of her ablest sons. She was about to engage in a death-struggle with a neighbor as powerful and as civilized as herself. The kingdom of the Chancas, commencing on the banks of the Apurimac, extended far to the east and north, including many of the richest valleys of the Andes. Their warlike king, Uscavilca, had already subdued the Quichuas, who dwelt in the upper valleys of the Apurimac tributaries to the southward, and was advancing on Cuzco, when Yupanqui pushed aside the imbecile Urco, and seized the helm.

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[1] [Ramusio's plan of Cuzco is given in Vol. II. p. 554, with references (p. 556) to other plans and descriptions; to which may be added an archæological examination by Wiener, in the *Bull. de la Soc. de Géog. de Paris*, Oct., 1879, and in his *Pérou et Bolivie*, with an enlarged plan of the town, showing the regions of different architecture; accounts in Marcoy's *Voyage à travers l'Amérique du Sud* (Paris, 1869; or Eng. transl. i. 174), and in Nadaillac's *L'Amérique préhistorique*, and by Squier in his *Peru*, and in his *Remarques sur la Géographie du Pérou*, p. 20. — Ed.]

[2] It is related by Betanzos that one day this Inca appeared before his people with a very joyful countenance. When they asked him the cause of his joy, he replied that Uira-cocha Pachayachachic had spoken to him in a dream that night. Then all the people rose up and saluted him as Viracocha Inca, which is as much as to say, — "King and God." From that time he was so called. Garcilasso gives a different version of the same tradition, in which he confuses Viracocha with his son.

[3] Cieza de Leon, ii. 138–44.

[4] Salcamayhua, 91.

* [One of the cuts which did service in the Antwerp editions of Cieza de Leon. There are various views in Squier's *Peru*, pp. 427–445. — Ed.]

WARRIORS OF THE INCA PERIOD.*

The fate of the Incas was hanging on a thread. The story is one of thrilling interest as told in the pages of Betanzos, but all authorities dwell more or less on this famous Chanca war. The decisive battle was fought outside the Huaca-puncu, the sacred gate of Cuzco. The result was long doubtful. Suddenly, as the shades of evening were closing over the Yahuar-pampa, — "the field of blood," — a fresh army fell upon the right flank of the Chanca host, and the Incas won a great victory. So unexpected was this onslaught that the very stones on the mountain sides were believed to have been turned into men. It was the armed array of the insurgent Quichuas who had come by forced marches to the help of their old masters. The memory of this great struggle was fresh in men's minds when the Spaniards arrived, and as the new conquerors passed over the battlefield, on their way to Cuzco, they saw the stuffed skins of the vanquished Chancas set up as memorials by the roadside.

The subjugation of the Chancas, with their allies the Huancas, led to a vast extension of the Inca empire, which now reached to the shores of the Pacific; and the last years of Yupanqui were passed in the conquest of the alien coast nation, ruled over by a sovereign known as the Chimu. Thus the reign of the Inca Yupanqui marks a great epoch. He beat down all rivals, and converted the Cuzco kingdom into a vast empire. He received the name of Pachacutec, or "he who changes the world," a name which, according to Montesinos, had on eight previous occasions been conferred upon sovereigns of the more ancient dynasties.

Tupac Inca Yupanqui, the son and successor of Pachacutec, completed the subjugation of the coast valleys, extended his conquests beyond Quito on the north and to Chile as far as the river Maule in the south, besides penetrating far into the eastern forests.

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* [After a cut given by Ruge, and showing figures from an old Peruvian painting. — Ed.]

Huayna Ccapac, the son of Tupac Inca Yupanqui, completed and consolidated the conquests of his father. He traversed the valleys of the coast, penetrated to the southern limit of Chile, and fought a memorable battle on the banks of the "lake of blood" (Yahuar-cocha), near the northern frontier of Quito. After a long reign,[1] the last years of which were passed in Quito, Huayna Ccapac died in November, 1525. His eldest legitimate son, named Huascar, succeeded him at Cuzco. But Atahualpa, his father's favorite, was at Quito with the most experienced generals. Haughty messages passed between the brothers, which were followed by war. Huascar's armies were defeated in detail, and eventually the generals of Atahualpa took the legitimate Inca prisoner, entered Cuzco, and massacred the family and adherents of Huascar.[2] The successful aspirant to the throne was on his way to Cuzco, in the wake of his generals, when he encountered Pizarro and the Spanish invaders at Caxamarca. This war of succession would not, it is probable, have led to any revolutionary change in the general policy of the empire. Atahualpa would have established his power and continued to rule, just as his ancestor Pachacutec did, after the dethronement of his brother Urco.[3]

The succession of the Incas from Manco Ccapac to Atahualpa was evidently well known to the Amautas, or learned men of the empire, and was recorded in their *quipus* with precision, together with less certain materials respecting the more ancient dynasties. Many blunders were committed by the Spanish inquirers in putting down the historical information received from the Amautas, but on the whole there is general concurrence among them.[4] Practically the Spanish authorities agree, and it is clear that the native annalists possessed a single record, while the apparent discrepancies are due to blunders of the Spanish transcribers. The twelve Incas from Manco Ccapac to Huascar may be received as historical personages whose deeds were had in memory at the time of the Spanish invasion, and were narrated to those among the conquerors who sought for information from the Amautas.

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[1] Blas Valera says 42, Balboa 33, years.

[2] [The ruins of Atahualpa's palace are figured in Wiener's *Pérou et Bolivie*, and in Cte. de Gabriac's *Promenade à travers l'Amérique du Sud* (Paris, 1868), p. 196. — ED.]

[3] The meanings of the names of these Incas are significant. Manco and Rocca appear to be proper names without any clear etymology. The rest refer to mental attributes, or else to some personal peculiarity. Sinchi means "strong." Lloque is "left-handed." Yupanqui is the second person of the future tense of a verb, and signifies "you will count." Garcilasso interprets it as one who will count as wise, virtuous, and powerful. Ccapac is rich; that is, rich in all virtues and attributes of a prince. Mayta is an adverb, "where;" and Salcamayhua says that the constant cry and prayer of this Inca was, "Where art thou, O God?" because he was constantly seeking his Creator. Yahuar-huaccac means "weeping blood," probably in allusion to some malady from which he suffered. Pachacutec has already been explained. Tupac is a word signifying royal splendor, and Huayna means "youth." Huascar is "a chain," in allusion to a golden chain said to have been made in his honor, and held by the dancers at the festival of his birth. The meaning of Atahualpa has been much disputed. *Hualpa* certainly means any large game fowl. *Hualpani* is to create. *Atau* is "chance," or "the fortune of war." Garcilasso, who is always opposed to derivations, maintains that Atahualpa was a proper name without special meaning, and that Hualpa, as a word for a fowl, is derived from it, because the boys in the streets, when imitating cock-crowing, used the word Atahualpa. But Hualpa formed part of the name of many scions of the Inca family long before the time of Atahualpa.

[4] All authorities agree that Manco Ccapac was the first Inca, although Montesinos places him far back at the head of the Pirhua dynasty, and all agree respecting the second, Sinchi

A. D.
1240 — Manco Ccapac.
1260 — Sinchi Rocca.
1280 — Lloque Yupanqui.
1300 — Mayta Ccapac.
1320 — Ccapac Yupanqui.
1340 — Inca Rocca.

A. D.
1360 — Yahuar-huaccac.
1380 — Uira-cocha.
1400 — Pachacutec Yupanqui.
1440 — Tupac Yupanqui.
1480 — Huayna Ccapac.
1523 — Inti Cusi Hualpa, or Huascar.

The religion of the Incas consisted in the worship of the supreme being of the earlier dynasties, the Illa Ticsi Uira-cocha of the Pirhuas. This simple faith was overlaid by a vast mass of superstition, represented by the cult of ancestors and the cult of natural objects. To this was superadded the belief in the ideals or souls of all animated things, which ruled and guided them, and to which men might pray for help. The exact nature of this belief in ideals, as it presented itself to the people themselves, is not at all clear. It prevailed among the uneducated. Probably it was the idea to which dreams give rise, — the idea of a double nature, of a tangible and a phantom being, the latter mysterious and powerful, and to be propitiated. The belief in this double being was extended to all animated nature, for even the crops had their spiritual doubles, which it was necessary to worship and propitiate.

But the religion of the Incas and of learned men, or Amautas, was a worship of the Supreme Cause of all things, the ancient God of the Titicaca myth, combined with veneration for the sun[1] as the ancestor of the reigning dynasty, for the other heavenly bodies, and for the *malqui*, or remains of their forefathers. This feeling of veneration for the sun, closely connected with the beneficent work of the venerated object as displayed in

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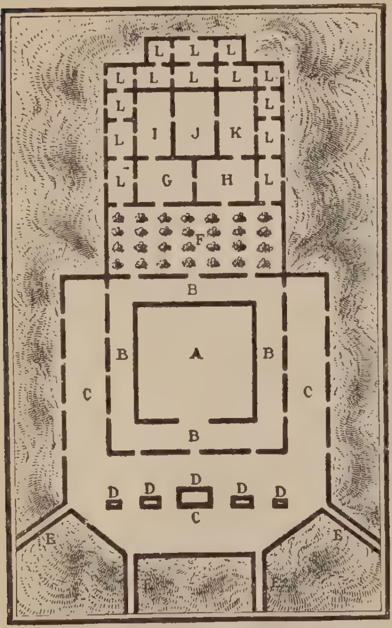
Rocca. Lloque Yupanqui, with various spellings, has the unanimous vote of all authorities except Acosta, who calls him "Iaguarhuarque." But Acosta's list is incomplete. Respecting Mayta Ccapac and Ccapac Yupanqui, all are agreed except Betanzos, who transposes them by an evident slip of memory. Touching Inca Rocca all are agreed, though Montesinos has Sinchi for Inca, and all agree as to Yahuar-huaccac. It is true that Cieza de Leon and Herrera call him Inca Yupanqui, but this is explained by Salcamayhua when he gives the full name, — Yahuar-huaccac Inca Yupanqui. All agree as to Uira-cocha. As to his successor, Betanzos, Cieza de Leon, Fernandez, Herrera, Salcamayhua, and Balboa mention the short reign of the deposed Urco. Cieza de Leon and Betanzos give Yupanqui as the name of Urco's brother; all other authorities have Pachacutec. The discrepancy is explained by his names having been Yupanqui Pachacutec. This also accounts for Garcilasso de la Vega and Santillan having made Pachacutec and Yupanqui into two Incas, father and son. Betanzos also interpolates a Yamque Yupanqui. All are agreed with regard to Tupac Inca Yupanqui, Huayna Ccapac, Huascar, and Atahualpa. [There is another comparison of the different lists in Wiener, *L'Empire des Incas*, p. 53. — ED.]

[1] [See an early cut of this sun-worship in Vol. II. p. 551. — ED.]

the course of the seasons, led to the growth of an elaborate ritual and to the celebration of periodical festivals.

The weight of evidence is decisively in the direction of a belief on the part of the Incas that a Supreme Being existed, which the sun must obey, as well as all other parts of the universe. This subordination of the sun to the Creator of all things was inculcated by successive Incas. Molina says, "They did not know the sun as their Creator, but as created by the Creator." Salcamayhua tells us how the Inca Mayta Ccapac taught that the sun and moon were made for the service of men, and that the chief of the Collas, addressing the Inca Uira-cocha, exclaimed, "Thou, O powerful lord of Cuzco, dost worship the teacher of the universe, while I, the chief of the Collas, worship the Sun." The evidence on the subject of the religion of the Incas, collected by the Viceroy Toledo, showed that they worshipped the Creator of all things, though they also venerated the sun; and Montesinos mentions an edict of the Inca Pachacutec, promulgated with the object of enforcing the worship of the Supreme God above all other deities. The speech of Tupac Inca Yupanqui, showing that the sun was not God, but was obeying laws ordained by God, is recorded by Acosta, Blas Valera, and Balboa, and was evidently deeply impressed on the minds of their Inca informers. This Inca compared the sun to a tethered beast, which always makes the same round; or to a dart, which goes where it is sent, and not where it wishes. The prayers from the Inca ritual, given by Molina, are addressed to the god Ticsi Uiracocha; the Sun, Moon, and Thunder being occasionally invoked in conjunction with the principal deity.

The worship of this creating God, the Dweller in Space, the Teacher and Ruler of the Universe, was, then, the religion of the Incas which had been nherited from their distant ancestry of the cyclopean age. Around this primitive cult had grown up a supplemental worship of creatures created by he Deity, such as the heavenly bodies, and of objects supposed to repre ent the first ancestors of *ayllus*, or tribes, as well as of the prototypes of hings on whom man's welfare depended, such as flocks and animals of the chase, fruit and corn. It has been asserted that the Deity, the Uira-cocha himself, did not generally receive worship, and that there was only one temple in honor of God throughout the empire, at a place called Pachacamac, on the coast. But this is clearly a mistake. The great temple at Cuzco, with its gorgeous display of riches, was called the "Ccuri-cancha Pacha-yachachicpa huasin," which means "the place of gold, the abode of the Teacher of the Universe." An elliptical plate of gold was fixed on the wall o represent the Deity, flanked on either side by metal representations of his creatures, the Sun and Moon. The chief festival in the middle of the year, called Ccapac Raymi, was instituted in honor of the supreme Creator, and when, from time to time, his worship began to be neglected by the people, who were apt to run after the numerous local deities, it was again and gain enforced by their more enlightened rulers. There were Ccuri-canchas for the service of God, at Vilca and in other centres of vice-regal rule, besides the grand fane of Cuzco.[1]



TEMPLE OF THE SUN.*

Although the first and principal invocations were addressed to the Creator, prayers were also offered up to the Sun and Moon, to the Thunder, and to ancestors who were called upon to intercede with the Deity.[2] The latter worship formed a very distinctive feature in the religious observances of nearly all the Incarial tribes. The *Paccarina*, or forefather of the *ayllu*, or lineage, was often some natural object converted into a *huaca*, or deity. The *Paccarina* of the Inca family was the Sun, with his sister and spouse, the Moon. A vast hierarchy was set apart to conduct the ceremonies connected with their worship, and hundreds of virgins, called *Aclla-cuna*, were secluded and devoted to duties relating to the observances in the Sun temples. Worship was also offered to the actual bodies of the ancestors, called *malqui*, which were preserved with the greatest care, in caves called *machay*. On solemn festivals each *ayllu* assembled with its *malqui*. The bodies of the Incas were all preserved, clothed as when alive, and surrounded by their special furniture and utensils. Three of these Inca mummies, with two mummies of queens, were discovered by Polo de Ondegardo, then corregidor of Cuzco, in 1559, and were sent by him to Lima for interment. Those who saw them[3] reported that they were so well preserved that they appeared to be alive; that they were in a sitting posture; that the eyes were nade of gold, and that they were arrayed in the insignia of their rank.[1] The *ᴾaccarina*, or founder of the family, and the *malquis*, or mummies of ancesors, thus formed the objects of a distinct belief and religion, based unloubtedly on the conviction that every human being has a spiritual as well ıs a corporeal existence; that the former is immortal, and that it is repreented by the *malqui*. The appearance of the departed in dreams and visions was not an unreasonable ground for this belief, which certainly was

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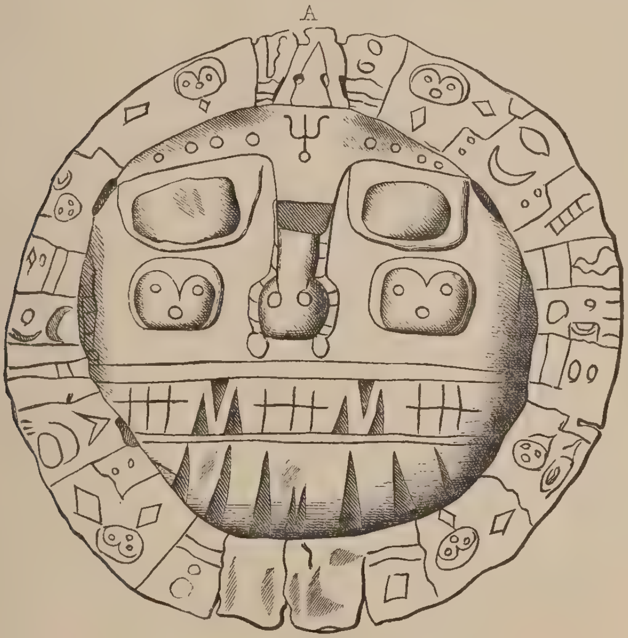
[1] At Pachacamac there was a temple to the coast deity, called locally Pachacamac, and another to the sun; but none to the supreme Creator, one of whose epithets was Pachacamac.

[2] Spanish authors mention a being called *Supay*, which they say was the devil. *Supay*, as an evil spirit, also occurs in the drama of Ollantay. It may have been some local *huaca*, but no devil as such, entered into the religious belief of the Incas.

[3] Acosta, Polo de Ondegardo, Garcilasso de la Vega.

* [After a cut in Marcoy, i. p. 234, where it is said to be drawn from existing remains and printed and manuscript authorities. The modern structure of the convent of Santo Domingo, built in 1534, is at A, which contains in its construction some remains of the walls of the older edifice. B is a cloister. C, an outer court. D, fountains for purification. E are streets leading to the great square of Cuzco. F, the garden where golden flowers were once placed; now used as a kitchen garden. G, the chapel dedicated to the moon. H, chapel dedicated to Venus and the Milky Way. I, chapel dedicated to thunder and lightning. J, chapel dedicated to the rainbow. K, council hall of the grand pontiff and priests of the sun. L, the apartments of the priests and servants. See the view of the temple from Montanus in Vol. II. p. 555, and a modern view in Wiener's *Pérou et Bolivie*, p. 318. Other plans and views are in Squier's *Peru*, pp. 430–445. — Ed.]



ZODIAC OF GOLD FOUND AT CUZCO.*

ıe most deeply rooted of all the religious ideas of the Peruvian people. 'he *paccarina*, or ancestral deities, were innumerable. There was one or ıore that received worship in every *tribe*, and was represented by a rock, r some other natural object. Many were believed to be oracles. Some, ıch as *Catequilla*, or *Apu-catequilla*,[2] the oracle of the Conchucu tribe, have been brought into undue prominence through being mentioned by Spanish writers.

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[1] The mummies were those of Incas Uiraocha, Tupac Yupanqui, and Huayna Ccapac; Mama Runtu (wife of Uira-cocha) and ſama Ocllo (wife of Tupac Yupanqui).

[2] Mentioned by Calancha (471) and Arriaga an oracle at the village of Tauca, in Conchuıs. Brinton has built up a myth which he credits to the whole Peruvian people, on the strength of a meaning applied to the word *Catequilla*, which is erroneous. It is exactly the same grammatical error that those etymologists fell into who thought that *Uira-cocha* signified "foam of the sea." (*Myths of the New World*, 154.)

* [After a drawing by Mr. Markham of the plate itself, made at Lima in 1853. Mr. Markham's drawing is produced in Bollaert's *Antiquarian Researches*, p. 146. The disk is 5 3-10 inches in diameter. The signs the outer ring are supposed to represent the months. — ED.]

Religious ceremonials were closely connected with the daily life of the people, and especially with the course of the seasons and the succession of months, as they affected the operations of agriculture. It was important to fix the equinoxes and solstices, and astronomical knowledge was a part of the priestly office. There were names for many of the stars; their motions were watched as well as those of the sun and moon; and though a record of the extent of the astronomical knowledge of the Incas has not been preserved, it is certain that they watched the time of the solstices and equinoxes with great care, and that they distinguished between the lunar and solar years. Pillars were erected to determine the time of the solstices, eight on the east and eight on the west side of Cuzco, in double rows, four and four, two low between two higher ones, twenty feet apart. They were called *Sucanca*, from *suca*, a ridge or furrow, the alternate light and shade between the pillars appearing like furrows. A stone column in the centre of a level platform, called *Inti-huatana*, was used to ascertain the time of the equinoxes. A line was drawn across the platform from east to west, and watch was kept to observe when the shadow of the pillar was on this line from sunrise to sunset, and there was no shadow at noon. The principal *Inti-huatana* was in the square before the great temple at Cuzco; but there are several others in different parts of Peru. The most perfect of these observatories is at Pissac, in the valley of Vilcamayu.[1] There is another at Ollantay-tampu, a fourth near Abancay, and a fifth at Sillustani in the Collao.

There is reason to believe that the Incas used a zodiac with twelve signs, corresponding with the months of their solar year. The gold plates which they wore on their breasts were stamped with features representing the sun, surrounded by a border of what are probably either zodiacal signs or signs for the months. Whether the ecliptic, or *huatana*, was thus divided or not, it is certain that the sun's motion was observed with great care, and that the calendar was thus fixed with some approach to accuracy.[2] The year, or *Huata*, was divided into twelve *Quilla*, or moon revolutions, and these were made to correspond with the solar year by adding five days, which were divided among the twelve months. A further correction was made every fourth year. Solar observations were taken and recorded every month.

The year commenced on the 22d of June, with the winter solstice, and there were four great festivals at the occurrence of the solstices and equinoxes.[3]

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[1] A very interesting account of it, with a sketch, is given by Squier, p. 524.

[2] *Huatana* means a halter, from *huatani*, to seize; hence the tying up or encircling of the sun.

[3] Authorities differ respecting the names of the months, and probably some months had more than one name. But the most accurate list, and that which is most in agreement with all the others, is the one adopted by the first Council of Lima, and given by Calancha. It is as follows: —

1. *Yntip Raymi* (22 June–22 July), Festival of the Winter Solstice, or *Raymi*.
2. Chahuarquiz (22 July–22 Aug.), Season of ploughing.
3. Yapa-quiz (22 Aug.–22 Sept.), Season of sowing.

The celebrations of the solar year and of the seasons, in their bearings n agriculture, were identical with the chief religious observances. The aymi, or festival of the winter solstice, in the first month, when the granries were filled after harvest, was established in special honor of the Sun. acrifices of llamas and lambs, and of the first-fruits of the earth, were ffered up to the images of the Supreme Being, of the Sun, and of Thuner, which were placed in the open space in front of the great temple; as ell as to the *huaca*, or stone representing the brother of Manco Ccapac, on he hill of Huanacauri. There was also a procession of the priests and peole as far as the pass of Vilcañota, leading into the basin of Lake Titicaca, acrifices being offered up at various spots on the road. The sacrifices were ccompanied by prayers, and concluded with songs, called *huayllina*, and ancing. Then followed the ploughing month, when it is said that the Inca imself opened the season by ploughing a furrow with a golden plough in he field behind the Colcampata palace, on the height above Cuzco.

The question here arises whether human sacrifices were offered up, in the nca ritual. This has been stated by Molina, Cieza de Leon, Montesinos, alboa, Ondegardo, and Acosta, and indignantly denied by Garcilasso de la ega. Cieza de Leon admits that there were occasional human sacrifices, ut adds that their numbers and the frequency of such offerings have been rossly exaggerated by the Spaniards. If the sacrifices had been offered nder the idea of atonement or expiation, it might well be expected that uman sacrifices would be included. Under such ideas, men offered up hat they valued most, just as Abraham was prepared to sacrifice his son, s Jephthah dedicated his daughter as a burnt-offering to Jehovah, and as he king of Moab sacrificed his eldest son to Chemosh.[1] But, except in the itua, when the idea was to efface sins by washing, the sacrifices of the Incas ere offerings of thanksgiving, not of expiation or atonement. The misake of the five writers who supposed that the Incas offered human sacrifices as due to their ignorance of the language.[2] The perpetration of human

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4. *Ccoya Raymi* (22 Sept.–22 Oct.), Festival of the Spring Equinox. *Situa*.
5. Uma Raymi (22 Oct.–22 Nov.), Season of brewing.
6. Ayamarca (22 Nov.–22 Dec.), Commemoration of the dead.

7. *Ccapac Raymi* (22 Dec.–22 Jan.), Festival of the Summer Solstice. *Huaraca*.
8. Camay (22 Jan.–22 Feb.), Season of exercises.
9. Hatun-poccoy (22 Feb.–22 March), Season of ripening.

0. *Pacha-poccoy* (22 March–22 April), Festival of Autumn Equinox. *Mosoc Nina*.
1. Ayrihua (22 April–22 May), Beginning of harvest.
2. Aymuray (22 May–22 June), Harvesting month.

The other authorities for the Inca months are Betanzos, Molina, Montesinos, Fernandez, and Ramos. Acosta also gives an incomplete list.

[1] Judges xii. 39; 2 Kings iii. 27.

[2] The sacrifices were called *runa*, *yuyac*, and *huahua*. The Spaniards thought that *runa* and *yuyac* signified men, and *huahua* children. This was not the case when speaking of sacrificial victims. *Runa* was applied to a male sacrifice, *huahua* to the lambs, and *yuyac* signified an adult or full-grown animal. The sacrificial animals were also called after the names of those who offered them, which was another cause of erroneous assumptions by Spanish writers. There was a law strictly prohibiting human sacrifices among the conquered tribes; and the statement that servants were sacrificed at the obsequies of their masters is disproved by the fact, mentioned by the anonymous Jesuit, that in none of the burial-places opened by the Spaniards in search of treasure were any human bones found, except those of the buried lord himself.

sacrifice was opposed to the religious ideas of the ancient Peruvians, and formed no part of their ceremonial worship. Their ritual was almost exclusively devoted to thanksgiving and rejoicings over the beneficence of their Deity. The notion of expiation formed no part of their creed, while the destruction involved in such a system was opposed to their economic and carefully regulated civil polity.[1]

The second great festival, called Situa, was celebrated at the vernal equinox. This was the commencement of the rainy season, when sickness prevailed, and the object of the ceremony was to pray to the Creator to drive diseases and evils from the land. In the centre of the great square of Cuzco a body of four hundred warriors was assembled, fully armed for war. One hundred faced towards the Chincha-suyu road, one hundred faced towards Anti-suyu, one hundred towards Colla-suyu, and one hundred towards Cunti-suyu, — the four great divisions of the empire. The Inca and the high-priest, with their attendants, then came from the temple, and shouted, "Go forth all evils!" On the instant the warriors ran at great speed towards the four quarters, shouting the same sentence as they went, until they each came to another party, which took up the cry, and the last parties reached the banks of great rivers, the Apurimac or Vilcamayu, where they bathed and washed their arms. The rivers were supposed to carry the evils away to the ocean. As the warriors ran through the streets of Cuzco, all the people came to their doors, shaking their clothes, and shouting, "Let the evils be gone!" In the evening they all bathed; then they lighted great torches of straw, called *pancurcu*, and, marching in procession out of the city, they threw them into the rivers, believing that thus nocturnal evils were banished. At night, each family partook of a supper consisting of pudding made of oarsely ground maize, called *sancu*, which was also smeared over their aces and the lintels of their doorways, then washed off and thrown into the ivers with the cry, "May we be free from sickness, and may no maladies nter our houses!" The *huacas* and *malquis* were also bathed at the feast f Situa. In the following days all the *malquis* were paraded, and there vere sacrifices, with feasting and dancing. A stone fountain, plated with old, stood in the great square of Cuzco, and the Inca, on this and other olemn festivals, poured *chicha* into it from a golden vase, which was con-ucted by subterranean pipes to the temple.

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[1] Prescott (I. p. 98, note) accepted the statement that human sacrifices were offered by the Incas, because six authorities, 'Sarmiento, Cieza de Leon, Montesinos, Balboa, Ondegardo, and Acosta — outnumbered the single authority on the other side, Garcilasso de la Vega, who, moreover, was believed to be prejudiced owing to his relationship to the Incas. Sarmiento and Cieza de Leon are one and the same, so that the number of authorities for human sacrifices is reduced to five. Cieza de Leon, Montesinos, and Balboa adopted the belief that human sacrifices were offered up, through a misunderstanding of the words *yuyac* and *huahua*. Acosta had little or no acquaintance with the language, as is proved by the numerous linguistic blunders in his work. Ondegardo wrote at a time when he scarcely knew the language, and had no interpreters; for it was in 1554, when he was judge at Cuzco. At that time all the annalists and old men had fled into the forests, because of the insurrection of Francisco Hernandez Giron.

The authorities who deny the practice are numerous and important. These are Francisco de Chaves, one of the best and most able of the original conquerors; Juan de Oliva; the Licentiate Alvarez; Fray Marcos Jofre; the Licentiate Falcon, in his *Apologia pro Indis;* Melchior Hernandez, in his dictionary, under the words *harpay* and *huahua;* the anonymous Jesuit in his most valuable narrative; and Garcilasso de la Vega. These eight authorities outweigh the five quoted by Prescott, both as regards number and importance. So that the evidence against human sacrifices is conclusive. The *Quipus*, as the anonymous Jesuit tells us, also prove that there was a law prohibiting human sacrifices.

The assertion that 200 children and 1,000 men were sacrificed at the coronation of Huayua Ccapac was made; but these "*huahuas*" were not children of men, but young lambs, which are called children; and the "*yuyac*" and "*runa*" were not men, but adult llamas. [Mr. Markham has elsewhere collated the authorities on this point (*Royal Commentaries*, i. 139). Cf. Bollaert's *Antiq. Researches*, p. 124; and Alphonse Castaing on "Les Fêtes, Offrandes et Sacrifices dans l'Antiquité Peruvienne," in the *Archives de la Société Américaine de France*, n. s., iii. 239. — Ed.]

The third great festival at the summer solstice, called *Huaracu*, was the ccasion on which the youths of the empire were admitted to a rank equiv-lent to knighthood, after passing through a severe ordeal. The Inca and is court were assembled in front of the temple. Thither the youths were onducted by their relations, with heads closely shorn, and attired in shirts f fine yellow wool edged with black, and white mantles fastened round heir necks by woollen cords with red tassels. They made their reverences o the Inca, offered up prayers, and each presented a llama for sacrifice.[1] roceeding thence to the hill of Huanacauri, where the venerated *huaca* to yar Uchu was erected, they there received *huaras*, or breeches made of loe fibres, from the priest. This completed their manly attire, and they eturned home to prepare for the ordeal. A few days afterwards they were ssembled in the great square, received a spear, called *yauri*, and *usutas* or andals, and were severely whipped to prove their endurance. The young andidates were then sent forth to pass the night in a desert about a league om Cuzco. Next day they had to run a race. At the farther end of the ourse young girls were stationed, called *ñusta-calli-sapa*,[2] with jars of chi-ha, who cried, "Come quickly, youths, for we are waiting!" but the course as a long one, and many fell before they reached the goal. They also had o rival each other in assaults and feats of arms. Finally their ears were ored, and they received ear-pieces of gold and other marks of distinction om the Inca. The last ceremony was that of bathing in the fountain lled Calli-puquio. About eight hundred youths annually passed through is ordeal, and became adult warriors, at Cuzco, and similar ceremonies ere performed in all the provinces of the empire.

In the month following on the summer solstice, there was a curious reli-ous ceremony known as the water sacrifice. The cinders and ashes of all he numerous sacrifices throughout the year were preserved. Dams were onstructed across the rivers which flow through Cuzco, in order that the ater might rush down with great force when they were taken away. rayers and sacrifices were offered up, and then a little after sunset all the shes were thrown into the rivers and the dams were removed. Then the urnt-sacrifices were hurried down with the stream, closely followed by crowds of people on either bank, with blazing torches, as far as the bridge at Ollantay-tampu. There two bags of coca were offered up by being hurled into the river, and thence the sacrifices were allowed to flow onwards to the sea. This curious ceremony seems to have been intended not only as a thank-offering to the Deity, but as an acknowledgment of his omnipresence. As the offerings flowed with the stream, they knew not whither, yet went to Him, so his pervading spirit was everywhere, alike in parts unknown as in the visible world of the Incas.

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[1] The sacrificial llamas bore the names of the uths who presented them. Hence the Span-n writers, with little or no knowledge of the language, assumed that the youths themselves were the victims. (See *ante*, p. 237.)

[2] *Ñusta*, princess; *calli*, valorous; *sapa*, alone, unrivalled.

A sacred fire was kept alive throughout the year by the virgins of the sun, and the ceremony of its annual renewal at the autumnal equinox was the fourth great festival, called *Mosoc-nina*, or the "new fire." Fire was produced by collecting the sun's rays on a burnished metal mirror, and the ceremony was the occasion of prayers and sacrifices. The year ended with the rejoicing of the harvest months, accompanied by songs, dances, and other festivities.

Besides the periodical festivals, there were also religious observances which entered into the life of each family. Every household had one or more *lares*, called *Conopa*, representing maize, fruit, a llama, or other object on which its welfare depended. The belief in divination and soothsaying, the practice of fasting followed by confession, and worship of the family *malqui*, all gave employment to the priesthood.

The complicated religious ceremonies connected with the periodical festivals, the daily worship, and the requirements of private families gave rise to the growth of a very numerous caste of priests and diviners. The pope of this hierarchy, the chief pontiff, was called *Uillac Umu*, words meaning "The head which gives counsel," he who repeats to the people the utterances of the Deity. He was the most learned and virtuous of the priestly caste, always a member of the reigning family, and next in rank to the Inca The *Villcas*, equivalent to the bishops of a Christian hierarchy, were the chief priests in the provinces, and during the greatest extension of the empire they numbered ten. The ordinary ministers of religion were divided into sacrificers, worshippers and confessors, diviners, and recluses.[1] It was ndeed inevitable that, with a complicated ritual and a gorgeous ceremonial orship, a populous class of priests and their assistants, of numerous grades nd callings, should come into existence.[1]

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[1] Of the first class were the *Tarpuntay*, or sacrificing priests, and the *Nacac*, who cut up the victims and provided the offerings, whether *harpay* or bloody sacrifices, *haspay* or bloodless sacrifices of flesh, or *cocuy*, oblations of corn, fruit, or coca. Molina mentions a custom called *Ccapac-cocha* or *Cacha-huaca*, being the distribution of sacrifices. An enormous tribute came to Cuzco annually for sacrificial purposes, and was thence distributed by the Inca, for the worship of every *huaca* in the empire. The different sacrifices were sent from Cuzco in all directions for delivery to the priests of the numerous *huacas*. The ministering priests were called *Huacap Uillac* when they had charge of a special idol, *Huacap Rimachi* or *Huatuc* when they received utterances from a deity while in a state of ecstatic frenzy called *utirayay*, and *Ychurichu* when they received confessions and ministered in private families. The soothsayers were very numerous class. The *Hamurpa* examined the entrails of sacrifices, and divined by th flight of birds. The *Llayca*, *Achacuc*, *Huatu* and *Uira-piricuc* were soothsayers of variou grades. The *Socyac* divined by maize heaps, th *Pacchacuc* by the feet of a large hairy spider, th *Llaychunca* by odds and evens. The recluse were not only *Aclla-cuna*, or virgins congregate in temples under the charge of matrons calle *Mama-cuna*. There were also hermits who meditated in solitary places, and appear to have bee under a rule, with an abbot called *Tucricac*, an younger men serving a novitiate called *Huama* These *Huancaquilli*, or hermits, took vows

But the intellectual movement and vigor of the Incas were not confined o the priesthood. The Amautas or learned men, the poets and reciters of istory, the musical and dramatic composers, the Quipu-camayoc, or record- rs and accountants, were not necessarily, nor indeed generally, of the riestly caste. It is probable that the Amautas, or men of learning, formed separate caste devoted to the cultivation of literature and the extension f the language. Our knowledge of their progress and of the character of heir traditions and poetic culture is very limited, owing to the destruction f records and the loss of oral testimony. The language has been preserved, nd that will tell us much; but only a few literary compositions have been aved from the wreck of the Inca empire. Quichua was the name given to he general language of the Incas by Friar Domingo de San Tomas, the rst Spaniard who studied it grammatically, possibly owing to his having cquired it from people belonging to the Quichua tribe. The name con- inued to be used, and has been generally adopted.[2] Garcilasso de la Vega peaks of a separate court language of the Incas, but the eleven words he ives as belonging to it are ordinary Quichua words, and I concur with Her- as and William von Humboldt in the conclusion that this court language

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astity (*titu*), obedience (*Huñicui*), poverty (*us- cuy*), and penance (*villullery*).

[1] [The general works on the Inca civilization ecessarily touch these points of their religious ustoms, and Mr. Markham's volume on the *ites and Laws of the Incas* is a prime source of formation. Hawk's translation of Rivero and on Tschudi (p. 151) gives references; but spe- al mention may be made of Müller's *Geschichte er Amerikanischen Urreligionen;* Castaing's *es Système religieux dans l'Antiquité peruvi- ne*, in the *Archives de la Soc. Amér. de France*, s., iii. 86, 145; Tylor's *Primitive Culture;* rinton's *Myths of the New World;* and Albert éville's *Lectures on the origin and growth of eligion as illustrated by the native religions of lexico and Peru. Delivered at Oxford and ondon, in April and May, 1884. Translated by hilip H. Wicksteed* (London, 1884. Hibbart ctures).—Ed.]

[2] The Quichua language was spoken over a ast area of the Andean region of South America. he dialects only differ slightly, and even the nguage of the Collas, called by the Spaniards ymara, is identical as regards the grammatical ructure, while a clear majority of the words e the same. The general language of Peru elongs to that American group of languages hich has been called agglutinative by William von Humboldt. These languages form new words by a process of junction which is much more developed in them than in any of the forms of speech in the Old World. They also have exclusive and inclusive plurals, and transitional forms of the verb combined with pronominal suffixes which are peculiar to them. In these respects the Quichua is purely an American language, and in spite of the resemblances in the sounds of some words, which have been diligently collected by Lopez (*Les Races Aryennes du Pérou*, par Vicente F. Lopez, Paris, 1871) and Ellis (*Peruvia Scythica*, by Robert Ellis, B. D., London, 1875), no connection, either as regards grammar or vocabulary, has been satisfactorily established between the speech of the Incas and any language of the Old World. Quichua is a noble language, with a most extensive vocabulary, rich in forms of the plural number, which argue a very clear conception of the idea of plurality; rich in verbal conjugations; rich in the power of forming compound nouns; rich in varied expressions to denote abstract ideas; rich in words for relationships which are wanting in the Old World idioms; and rich, above all, in synonyms: so that it was an efficient vehicle wherewith to clothe the thoughts and ideas of a people advanced in civilization.

of Garcilasso had no real existence.[1] It is not mentioned by any other authority.

It was the custom for the Yaravecs or Bards to recite the deeds of former Incas on public occasions, and these rhythmical narratives were orally preserved and handed down by the learned men. Cieza de Leon tells us that "by this plan, from the mouths of one generation the succeeding one was taught, and they could relate what took place five hundred years ago as if only ten years had passed. This was the order that was taken to prevent the great events of the empire from falling into oblivion." These historical recitations and songs must have formed the most important part of Inca literature. One specimen of imaginative poetry has been preserved by Blas Valero, in which the thunder, followed by rain, is likened to a brother breaking his sister's pitcher; just as in the Scandinavian mythology the legend which is the original source of our nursery rhyme of Jack and Jill employs the same imagery. Pastoral duties are embodied in some of the later Quichuan dramatic literature, and numerous love songs and *yaravies*, or elegies, have been handed down orally, or preserved in old manuscripts. The dances were numerous and complicated, and the Incas had many musical instruments.[2] Dramatic representations, both of a tragic and comic character, were performed before the Inca court. The statement of Garcilasso de la Vega to this effect is supported by the independent evidence of Cieza de Leon and of Salcamayhua, and is placed beyond a doubt by the sentence of the judge, Areche, in 1781, who prohibited the celebration of these dramas by the Indians. Father Iteri also speaks of the "Quichua dramas transmitted to this day (1790) by an unbroken tradition." But only one such drama has been handed down to our own time. It is entitled Ollantay, and records an historical event of the time of Yupanqui Pachacutec. In its present form, as regards division into scenes and stage directions, it shows later Spanish manipulation. The question of its antiquity has been much discussed; but the final result is that Quichua scholars believe most of its dialogues and speeches and all the songs to be remnants of the Inca period.

The system of record by the use of *quipus*, or knots, was primarily a method of numeration and of keeping accounts To cords of various colors smaller lines were attached in the form of fringe, on which there were knots in an almost infinite variety of combination. The *Quipu-camayoc*, or accountant, could by this means keep records under numerous heads, and preserve the accounts of the empire. The *quipus* represented a far better system of keeping accounts than the exchequer tallies which were used in England for the same purpose as late as the early part of the present century. But the question of the extent to which historical events could be recorded by this system of knots is a difficult one. We have the direct assertions of Montesinos, Salcamayhua, the anonymous Jesuit, Blas Valera, and others, that not only narratives, but songs, were preserved by means of the *quipus*. Von Tschudi believed that by dint of the uninterrupted studies of experts during several generations, the power of expression became developed more and more, and that eventually the art of the *Quipu-camayoc* reached a high state of perfection. It may reasonably be assumed that with some help from oral commentary, codes of laws, historical events, and even poems were preserved in he *quipus*. It was through his substitute for writing that Montesinos and the anonymous Jesuit received their lists of ancient dynasties, and Blas Valera distinctly says that the poem he has preserved was aken from *quipus*. Still it must have been rather a system of mnemonics than of complete record. Molina tells us hat the events in the reigns of all the Incas, as well as early traditions, were represented by paintings on boards, in a temple near Cuzco, called *Poquen cancha*.

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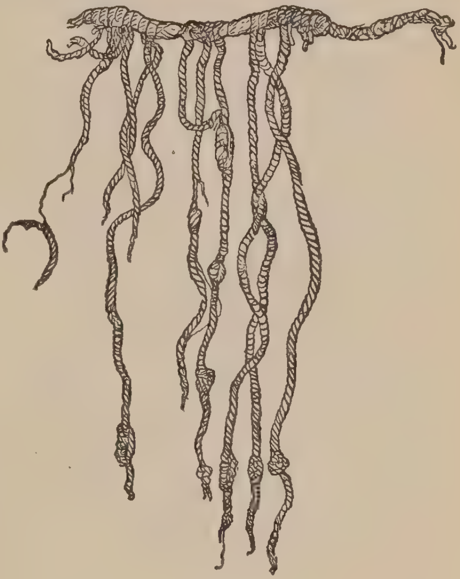
[1] Garcilasso, *Com. Real.*, i. lib. i. cap. 24, and lib. vii. cap. 1.

[2] Among several kinds of flutes were the *chayña*, made of cane, the *pincullu*, a small wooden flute, and the *pirutu*, of bone. They also had a stringed instrument called *tinya*, for accompanying their songs, a drum, and trumpets of several kinds, one made from a sea-shell.



THE QUIPUS.*

The diviners used certain incantations to cure the sick, but the healing rt among the Incas was really in the hands of learned men. Those *Amauas* who devoted themselves to the study of medicine had, as Acosta bears estimony, a knowledge of the properties of many plants. The febrifuge irtues of the precious *quinquina* were, it is true, unknown, or only locally nown. But the *Amautas* used plants with tonic properties for curing

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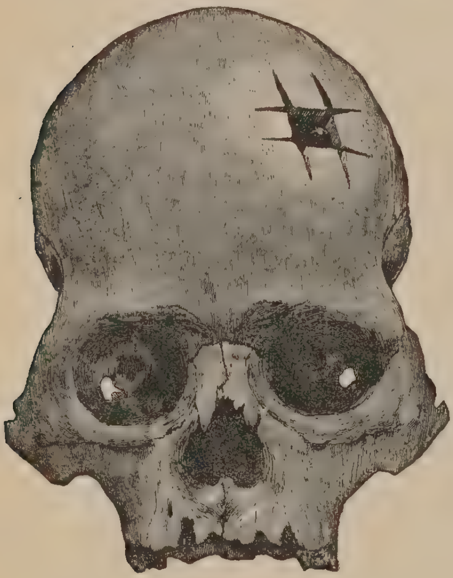
* [Following a sketch in Rivero and Tschudi, as reproduced by Helps. It shows a quipu found in an ncient cemetery near Pachacamac. There are other cuts in Wiener's *Pérou et Bolivie*, p. 777; Tylor's *arly Hist. Mankind*, 156; Kingsborough's *Mexico*, vol. iv.; Silvestre's *Universal Palæography;* and éon de Rosny's *Écritures figuratives*, Paris, 1870. Cf. Acosta, vi. cap. 8, and other early authorities menoned in Prescott (Kirk's ed. i. 125); Markham's *Cieza*, 291; D. Wilson's *Prehistoric Man*, ii. ch. 18; *Fourth ept. Bureau of Ethnology* (Washington), p. 79; Bollaert's description in *Memoirs read before the Anropological Society of London*, i. 188, and iii. 351; A. Bastian's *Culturländer des alten America*, iii. 73, rasseur de Bourbourg's *MS. Troano*, i. 18; Stevens's *Flint Chips*, 465; T. P. Thompson's "Knot Records Peru" in *Westminster Review*, xi. 228; but in the separate print called *History of the Quipos, or Peruvian not-records, as given by the early Spanish Historians, with a Description of a supposed Specimen*, assigned .Al. Strong by Leclerc, No. 2413. The description in Frezier's *Voyage to the South Sea* (1717) is one of e earliest among Europeans. Leclerc, No. 2412, mentions a *Letter a apologetica* (Napoli, 1750), pertaining the *quipus*, but seems uncertain as to its value. — Ed.]

fevers ; and they were provided with these and other drugs by an itinera
caste, called Calahuayas or Charisanis, who went into the forests to pr
cure them. The descendants of these itinerant doctors still wander ov
South America, selling drugs.[1] The discovery of a skull in a cemete
at Yucay, which exhibits cle
evidence of a case of trepa
ning before death, proves t
marvellous advances made
the Incas in surgical science.



INCA SKULL.*

The sovereign was the cent
of all civilization and all know
edge. All literary culture,
the religious ceremonial whi
had grown up with the extensi
of the empire, had the Inca f
their centre, as well as all t
military operations and all la
connected with civil administ
tion. Originally but the *Sinc*
or chief of a small *ayllu*, t
greatness of successive Inc
grew with the extension of the
power, until at last they we
looked upon almost as deiti
by their subjects. The greate
lords entered their presence
a stooping position and with a small burden on their backs. The i
perial family rapidly increased. Each Inca left behind him numero
younger sons, whose descendants formed an *ayllu*, so that the later so
ereigns were surrounded by a numerous following of their own kindre
from among whom able public servants were selected. The sovereign w

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[1] Blas Valera wrote upon the subject of Inca drugs, and I have given a list of those usually found in the bags of the itinerant Calahuaya doctors, in a foot-note at page 186 in vol. i. of my translation of the first part of the *Royal Commentaries* of Garcilasso de la Vega. An int
esting account of the Calahuaya doctors is giv
by Don Modesto Basadre in his *Riquezas Pe*
anas, p. 17 (Lima, 1884).

* [After the plate in the *Contrib. to N. Am. Ethnology*, vol. v. (Powell's survey, 1882), showing the
phined skull brought from Peru by Squier, in the Army Med. Museum, Washington. Squier in his *Pe*
p. 457, gives another cut, with comments of Broca and others in the appendix. Cf. in the same volume a pa
on "Prehistoric Trephining and Cranial Amulets," by R. Fletcher, and a paper on "Trephining in the N
lithic Period," in the *Journal of the Anthropological Institute*, Nov., 1887. Cf. on Peruvian skulls Ru
Virchow, in the third volume of the *Necropolis of Ancon ;* T. J. Hutchinson in the *Jôurnal of the Anthr*
logical Institute, iii. 311 ; iv. 2 ; Busk and Davis in *Ibid.* iii. 86, 94 ; Wilson's *Prehistoric Man*, ii. ch. 20 ;
C. Blake, in *Transactions Ethnolog. Soc.*, n. s., ii. There are two collections of Peruvian skulls in the Peab
Museum at Cambridge, Mass., — one presented by Squier, the other secured by the Haasler Expedition. (
Reports VII. and IX. of the museum.) Wiener (*L'Empire des Incas*, p. 81) cites a long list of writers on
artificial deforming of the skull. — ED.]

he "*Sapallan Inca*," the sole and sovereign lord, and with good reason he as called *Huaccha-cuyac*, or friend of the poor.

Enormous wealth was sent to Cuzco as tribute from all parts of the em- ire, for the service of the court and of the temples. The special insignia f the sovereign were the *llautu*, or crimson fringe round the forehead, the ing feathers (black and white) of the alcamari, an Andean vulture, on the ead, forming together the *suntu paucar* or sacred head-dress; the *huaman hampi*, or mace, and the *ccapac-yauri*, or sceptre. His dress consisted of hirts of cotton, tunics of dyed cotton in patterns, with borders of small gold nd silver plates or feathers, and mantles of fine vicuña wool woven and yed. The Incas, as represented in the pictures at Cuzco,[1] painted soon fter the conquest, wore golden breastplates suspended round their necks, ith the image of the sun stamped upon them;[2] and the *Ccoya*, or queen, ore a large golden *topu*, or pin, with figures engraved on the head, which ecured her *lliclla*, or mantle. All the utensils of the palace were of gold; nd so exclusively was that precious metal used in the service of the court nd the temple that a garden outside the Ccuri-cancha was planted with odels of leaves, fruit, and stalks made of pure gold.[3]

RUINS AT CHUCUITO.*

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[1] In the church of Santa Anna.

[2] [See pictures of Atahualpa in Vol. II. pp. 15, 516. For a colored plate of "Lyoux d'or éruviens," emblems of royalty, see *Archives de a Soc. Amér. de France*, n. s., i. pl. v. — ED.]

[3] The truth of this use of gold by the Incas oes not depend on the glowing descriptions of Garcilasso de la Vega. A golden breastplate nd *topu*, a golden leaf with a long stalk, four pecimens of golden fruit, and a girdle of gold ere found near Cuzco in 1852, and sent to the ate General Echenique, then President of Peru. The present writer had an opportunity of inspecting and making careful copies of them. His drawings of the breastplate and *topu* were lithographed for Bollaert's *Antiquarian Researches in Peru*, p. 146. The breastplate was 5 3-10 inches in diameter, and had four narrow slits for suspending it round the neck. The golden leaf was 12 7-10 inches long, including the stem; breadth of the base of the leaf, 3 1-10 inches. The models of fruit were 3 inches in diameter, and the girdle 18 1-4 inches long.

* [After a drawing in Squier's *Primeval Monuments of Peru*, p. 17, showing a wall of hewn stones, with n entrance. The enclosed rectangle is 65 feet on each side, — "a type of an advanced class of megalithic onuments by no means uncommon in the highlands of Peru." Cf. Squier's *Peru*, p. 354. — ED.]

The architecture of a people is one of the most important tests of their civilization, and in this art the Incas had made astonishing progress. When their ancestor first arrived at Cuzco he had before him the cyclopean labors of a former dynasty on the heights of the Sacsahuaman. Two mountain streams flowed from either side of that hill and united in the plain, often overflowing their banks and forming swamps. The Incas drained the ground, confined the torrents between masonry walls, and erected edifices in the reclaimed space, which will remain as monuments of their skill and taste for all time. Here rose the famous city of Cuzco.

LAKE TITICACA.*

Two styles are discernible in Inca architecture. The earliest is an imitation of the cyclopean works of their ancestors on a smaller scale. Th walls were built with polygonal-shaped stones with rough surfaces, but th stones were much reduced in size. Rows of doorways with slanting side and monolithic lintels adorn the façades; while recesses for *huacas*, shaped like the doorways, occur in the interior walls. Part of the palace called the Collcampata, at the foot of the Cuzco fortress, the buildings which were added to the cyclopean work at Ollantay tampu, the older portion of the Ccuri-cancha temple at Cuzco, the palaces at Chinchero and Rimac-tampu, are in this earlier style. The later style is seen mainly at Cuzco, where the stones are laid in regular courses. No one has described this superb masonry better than Squier.[1] No cement or mortar of any kind was used, the edifices depending entirely on the accuracy of their stone-fitting for their stability. The palaces and temples were built round a court-yard, and a hall of vast dimensions, large enough for ceremonies on an extensive scale, was included in the plan of most of the edifices. These halls were 200 paces long by 50 to 60 broad. The dimensions of the Ccuri-cancha temple were 296 feet by 52, and the southwest end was apsidal. Serpents are carved in relief on some of the stones and lintels of the Cuzco palaces. Hence the palace of Huayna Ccapac is called Amaru-cancha.[2] At Hatun-colla, near Lake Titicaca, there are two sandstone pillars, probably of Inca origin, which are very richly carved. They are covered with figures of serpents, lizards, and frogs, and with elaborate geometrical patterns. The height of the walls of the Cuzco edifices was from 35 to 40 feet, and the roofs were thatched. One specimen of the admirable thatching of the Incas is still preserved at Azangaro.

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* [After a cut in Ruge's *Gesch. des Zeital. der Entdeckungen.* Squier explored the lake with Raimon in 1864–65, and bears testimony to the general accuracy of the survey by J. B. Pentland, British consul in Bolivia (1827–28 and 1837), published by the British admiralty; but Squier points out some defects of his surve in his *Remarques sur la Géog. du Pérou*, p. 14, and in *Journal Amer. Geog. Soc.*, iii. There is another vie in Wiener's *Pérou et Bolivie*, p. 441. Cf. Markham's *Cieza de Leon*, 370; Marcoy's *Voyage;* Baldwin's *A* *cient America*, 228; and Philippson's *Gesch. des neu. Zeit.*, i. 240. Squier in his *Peru* (pp. 308–370) give various views, plans of the ruins, and a map of the lake. — Ed.]

There are many ruins throughout Peru both in the earlier and later styles; some of them, such as those at Vilcashuaman and Huanuco el viejo, being of great interest. The Inca palace on the island in Lake Titicaca is a rectangular two-storied edifice, with numerous rooms having ceilings formed of flat overlapping stones, laid with great regularity. With its esplanade, beautiful terraced gardens, baths, and fountains, this Titicaca palace must have been intended for the enjoyment of beautiful scenery in comparative seclusion, like the now destroyed palace at Yucay, in the valley of the Vilcamayu.

LAKE TITICACA.*

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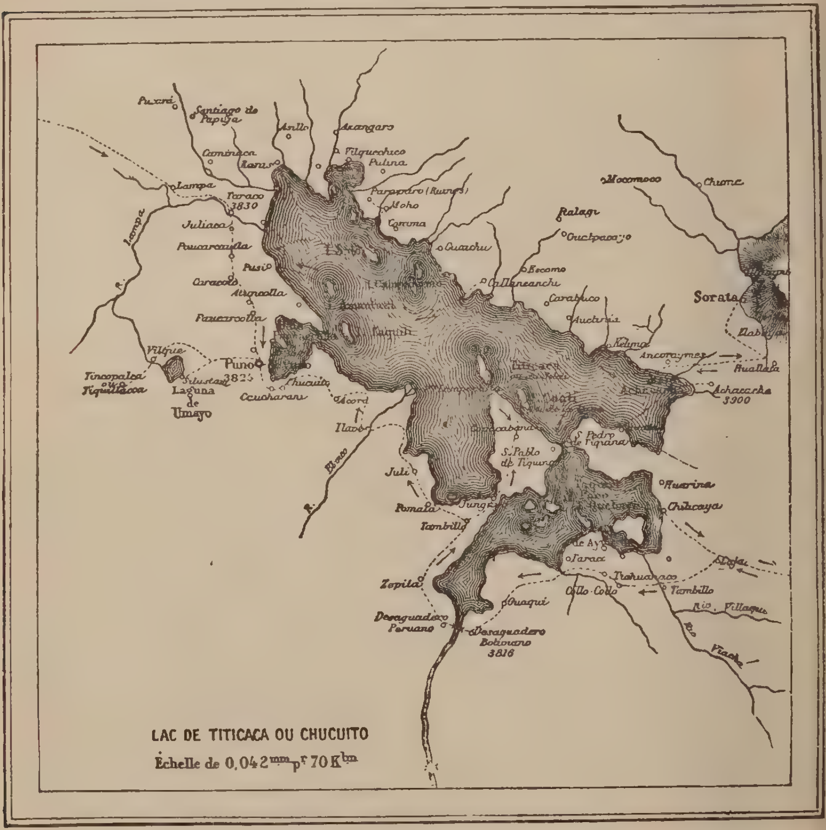
[1] "The stones are of various sizes in different structures, ranging in length from one to eight feet, and in thickness from six inches to two feet. The larger stones are generally at the bottom, each course diminishing in thickness towards the top of the wall, thus giving a very pleasing effect of graduation. The joints are of a precision unknown in our architecture, and not rivalled in the remains of ancient art in Europe. The statement of the old writers, that the accuracy with which the stones of some structures were fitted together was such that it was impossible to introduce the thinnest knife-blade or finest needle between them, may be taken as strictly true. The world has nothing to show in the way of stone cutting and fitting to surpass the skill and accuracy displayed in the Inca structures of Cuzco."

[2] Place of serpents.

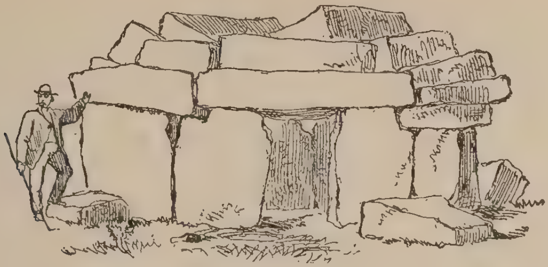
* [One of the cuts which did service in the Antwerp editions of Cieza de Leon. — Ed.]

An example of the improvement of architecture after Inca subjugation is shown in the curious burial-places, or *chulpas*, of the Collao, in the basin of Lake Titicaca. The earliest, as seen at Acora near the lake, closely resemble the rude cromlechs of Brittany. Next, roughly built square towers are met with, with vaults inside. Lastly, the *chulpas* at Sillustani are well-built circular towers, about 40 feet high and 16 feet in diameter at the base, widening as they rise. A cornice runs round each tower, about three fourths of the distance from the base to the summit. The stones are admirably cut and fitted in nearly even courses, like the walls at Cuzco. The interior circular vaults, which contained the bodies, were arched with overlapping stones, and a similar dome formed the roof of the towers.

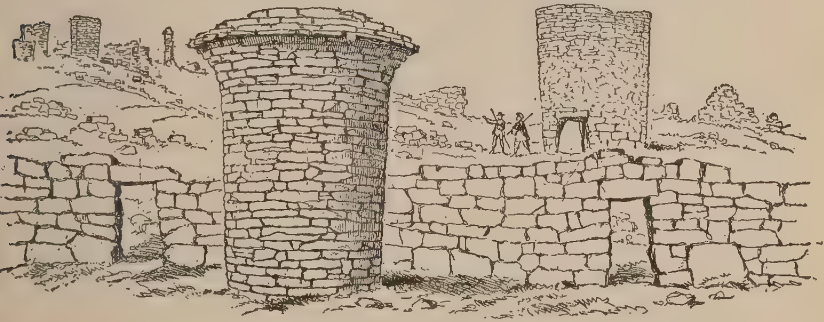


MAP OF TITICACA, WITH WIENER'S ROUTE.

The architectural excellence reached by the Incas, their advances in the other arts and in literature, and the imperial magnificence of their court and religious worship, imply the existence of an orderly and well-regulated administrative system. An examination of their social polity will not disappoint even high expectations. The Inca, though despotic in theory, was bound by the complicated code of rules and customs which had gradually developed itself during the reigns of his ancestors. In his own extensive family, composed of Auqui[1] and Atauchi,[2] Palla[3] and Ñusta,[4] to the number of many hundreds,[5] and in the Curacas[6] and Apu-curacas[7] of the conquered tribes, he had a host of able public servants to govern provinces, enter the priesthood, or command armies.



PRIMEVAL TOMB, ACORA.*



RUINS AT QUELLENATA.†

The empire was marked out into four great divisions, corresponding with the four cardinal points of a compass placed at Cuzco. To the north was

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[1] An unmarried prince of the blood royal; a nobleman. Father, in the Colla dialect.

[2] A married prince of the blood royal.

[3] A married princess; a lady of noble family.

[4] An unmarried princess.

[5] At the conquest there were 594, but a great number had been killed in the previous civil war.

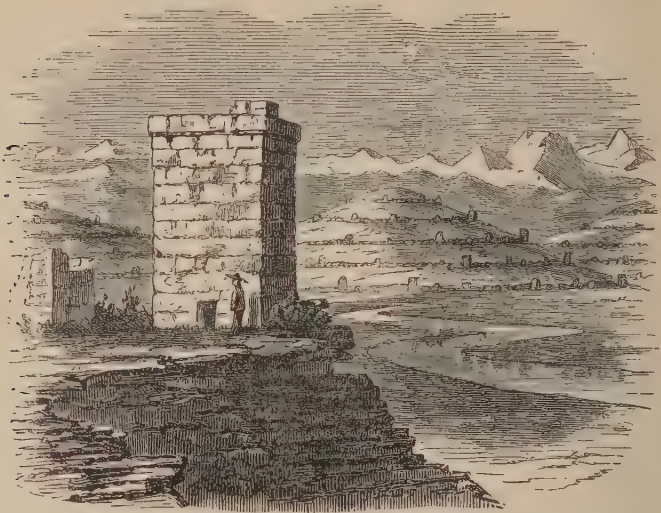
[6] Chiefs.

[7] Principal chiefs.

* [After a sketch in Squier's *Primeval Monuments of Peru*, Salem, 1870. He considers it an example of ome of the oldest of human monuments, and is inclined to believe these chulpas, or burial monuments, to have been built by the ancestors of the Peruvians of the conquest in their earliest development. — ED.]

† [Reduced from a sketch in Squier's *Primeval Monuments of Peru*, p. 7. They are situated in Bolivia, northeast of Lake Titicaca, and the cut shows a hill-fortress (pucura) and the round, flaring-top burial towers (chulpas). Cf. cut in Wiener's *Pérou et Bolivie*, p. 538. — ED.]

Chinchay-suyu, to the east Anti-suyu, to the west Cunti-suyu, and to the



RUINS AT ESCOMA, BOLIVIA.*

south Colla-suyu. The whole empire was called Ttahuantin-suyu, or the

SILLUSTANI, PERU.†

four united provinces. Each great province was governed by an Inca viceroy, whose title was *Ccapac*, or *Tucuyricoc*.[1] The latter word means " He vho sees all." Garcilasso describes the office as merely that of an inspector, vhose duty it was to visit the province and report. Under the viceroy vere the native *Curacas*, who governed the *ayllus*, or lineages. Each *ayllu* vas divided into sections of ten families, under an officer called *Chunca* (10) *amayu*. Ten of these came under a *Pachaca* (100) *camayu*. Ten *Pachacas* ormed a *Huaranca* (1,000) *camayu*, and the *Hunu* (10,000) *camayu* ruled over ten *Huarancas*. The *Chunca* of ten families was the unit of govern-nent, and each *Chunca* formed a complete community.[1]

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[1] Balboa, Montesinos, Santillana.

* [After a cut in Squier's *Primeval Monuments of Peru*, p. 9, — a square two-storied burial tower (chulpa with hill-fortress (pucura) in the distance, situated east of Lake Titicaca. Cf. Squier's *Peru*, p. 373. — Ed.]

† [Sun-circles (Intihuatana, where the sun is tied up), after a cut in Squier's *Primeval Monuments of Peru* p. 15. The nearer circle is 90 feet; the farther, which has a grooved outlying platform, is 150 feet in diameter. Cf. plan and views in Squier's *Peru*, ch. 20. — Ed.]

Autographié par Ch. Wiener, d'après le croquis original

RUINS OF AN INCARIAL VILLAGE.*

The cultivable land belonged to the people in their *ayllus*, each *Chunca* peing allotted a sufficient area to support its ten *Purics* and their de-pendants.[2] The produce was divided between the government (*Inca*), the priesthood (*Huaca*), and the cultivators or poor (*Huaccha*), but not in equal shares.[1] In some parts the three shares were kept apart in cultivation, but as a rule the produce was divided at harvest time. The flocks of llamas were divided into *Ccapac-llama*, belonging to the state, and *Huaccha-llama*, owned by the people. Thus the land belonged to the *ayllu*, or tribe, and each *puric*, or able-bodied man, had a right to his share of the crop, provided that he had been present at the sowing. All those who were absent must have been employed in the service of the Inca or Huaca, and subsisted on the government or priestly share. Shepherds and mechanics were also dependent on those shares. Officers called *Runay-pachaca* annually revised the allotments, made the census, prepared statistics for the *Quipu-camayoc*, and sent reports to the *Tucuyricoc*. The *Llacta-camayoc*, or village overseer, announced the turns for irrigation and the fields to be cultivated when the shares were grown apart. These daily notices were usually given from a tower or terrace. There were also judges or examiners, called *Taripasac*,[2] who investigated serious offences and settled disputes. Punishments for crimes were severe, and inexorably inflicted. It was also the duty of these officers, when a particular *ayllu* suffered any calamity through wars or natural causes, to allot contingents from surrounding *ayllus* to assist the neighbor in distress. There were similar arrangements when the completion or repair of any public work was urgent. The most cruel tax on the people consisted in the selection of the *Aclla-cuna*, or chosen maidens for the service of the Inca, and the church, or *Huaca*. This was done once a year by an ecclesiastical dignitary called the *Apu-Panaca*,[3] or, according to one authority, the *Hatun-uilca*,[4] who was deputy of the high-priest. Service under the Inca in all other capacities was eagerly sought for.

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[1] The male members of a *Chunca* were di-ided into ten classes, with reference to age and onsequent ability to work:—

1. *Mosoc-aparic*, "Newly begun." A baby.
2. *Saya-huarma*, "Standing boy." A child that could stand.
3. *Macta-puric*, "Walking child." Child aged 2 to 8.
4. *Ttanta raquisic*, "Bread receiver." Boy of 8.
5. *Puclacc huarma*, "Playing boy." Boys from 8 to 16.
6. *Cuca pallac*, "Coca picker." Age from 16 to 20. Light work.
7. *Yma huayna*, "As a youth." Age 20 to 25.
8. *Puric* ——, "Able-bodied." Head of a family; paying tribute.
9. *Chaupi-ruccu*, "Elderly." Light service. Age 50 to 60.
10. *Puñuc ruccu*, "Dotage." No work. Sixty and upwards.

A *Chunca* consisted of ten *Purics*, with the other classes in proportion. The *Puric* was narried to one wife, and, while assisted by the oung lads and the elderly men, he supported he children and the old people who could not work. The Peruvian laborer had many superstitions, but he was not devoid of higher religious feelings. This is shown by his practice when travelling. On reaching the summit of a pass he never forgot to throw a stone, or sometimes his beloved pellet of coca, on a heap by the roadside, as a thank-offering to God, exclaiming, *Apachicta muchani!* "I worship or give thanks at this heap." Festivals lightened his days of toil by their periodical recurrence, and certain family ceremonials were also recognized as occasions for holidays. There was a gathering at the cradling of a child, called *quirau*. When the child attained the age of one year, the *rutuchicu* took place. Then he received the name he was to retain until he attained the age of puberty. The child was closely shorn, and the name was given by the eldest relation. With a girl the ceremony was called *quicuchica*, and there was a fast of two days imposed before the naming-day, when she assumed the dress called *aucalluasu*.

[2] The *tupu* was a measure of land sufficient to support one man and his wife. It was the unit of land measurement, and a *puric* received *tupus* according to the number of those depen-

* [Situated on the road from Milo to Huancayo. Reduced from an ink drawing given by Wiener in his *'Empire des Incas*, pl. v.— Ed.]

The industry and skill of the Peruvian husbandmen can scarcely alone account for the perfection to which they brought the science of agriculture. The administrative system of the Incas must share the credit. Not a spot of cultivable land was neglected. Towns and villages were built on rocky ground. Even their dead were buried in waste places. Dry wastes were irrigated, and terraces were constructed, sometimes a hundred deep, up the sides of the mountains. The most beautiful example of this terrace cultivation may still be seen in the "Andeneria," or hanging gardens of the valley of Vilcamayu, near Cuzco. There the terraces, commencing with broad fields at the edge of the level ground, rise to a height of 1,500 feet, narrowing as they rise, until the loftiest terraces against the perpendicular mountain side are not more than two feet wide, just room for three or four rows

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dent on him. In parts of Peru, especially on the road from Tarma to Xauxa, these small square fields, or *tupus*, may still be seen in great numbers, divided by low stone walls.

[1] The shares for the *Inca* and *Huaca* varied according to the requirements of the state. If needful, the *Inca* share was increased at the expense of the *Huaca*, but never at the expense of the people's share.

[2] From *Taripani*, I examine.

[3] It should probably be *Apunaca*: *Apu* is a chief, and *naca* the plural suffix in the Colla dialect.

[4] *Hatun*, great, and *uilca*, sacred. This official held a position equivalent to a Christian bishop.

of maize. An irrigation canal, starting high up some narrow ravine at the snow level, is carried along the mountain side and through the terraces, flowing down from one to another.

Irrigation on a larger scale was employed not only on the desert coast, but to water the pastures and arable lands in the mountains, where there is rain for several months in the year. The channels were often of considerable size and great length. Mr. Squier says that he has followed them for days together, winding amidst the projections of hills, here sustained by high masonry walls, there cut into the living rock, and in some places conducted in tunnels through sharp spurs of an obstructing mountain. An officer knew the space of time necessary for irrigating each *tupu*, and each cultivator received a flow of water in accordance with the requirements of his land. The manuring of crops was also carefully attended to.[1]

The result of all this intelligent labor was fully commensurate with the thought and skill expended. The Incas produced the finest potato crops the world has ever seen. The white maize of Cuzco has never been approached in size or in yield. Coca, now so highly prized, is a product peculiar to Inca agriculture, and its cultivation required extreme care, especially in the picking and drying processes. Ajï, or Chile pepper, furnished a new condiment to the Old World. Peruvian cotton is excelled only by Sea Island and Egyptian in length of fibre, and for strength and length of fibre combined is without an equal. Quinua, oca, aracacha, and several fruits are also peculiar to Peruvian agriculture.[2]

The vast flocks of llamas[3] and alpacas supplied meat for the people, dried *charqui* for soldiers and travellers, and wool for weaving cloth of every degree of fineness. The alpacas, whose unrivalled wool is now in such large demand, may almost be said to have been the creation of the Inca shepherds. They can only be reared by the bestowal on them of the most constant and devoted care. The wild *huanacus* and *vicuñas* were also sources of food and wool supply. No man was allowed to kill any wild animal in Peru, but there were periodical hunts, called *chacu*, in the different provinces, which were ordered by the Inca. On these occasions a wide area was surrounded by thousands of people, who gradually closed in towards the centre. They advanced, shouting and starting the game before them, and closed in, forming in several ranks until a great bag was secured. The females were released, with a few of the best and finest males. The rest were then shorn and also released, a certain proportion being killed for the sake of their flesh. The *huanacu* wool was divided among the people of the district, while the silky fleeces of the *vicuña* were reserved for the Inca. The *Quipucamayoc* kept a careful record of the number caught, shorn, and killed.

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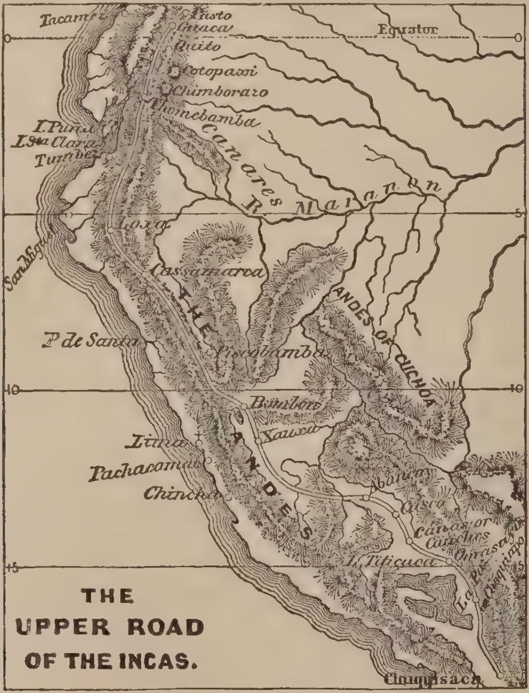
[1] [On the use of guano see Markham's *Cieza de Leon*, p. 266, note. — ED.]

[2] [Max Steffen, in his *Die Landwirtschaft bei den Altamerikanischen Kulturvölkern* (Leipzig, 1883), gives a list of sources. — ED.]

[3] [The llamas were used in ploughing. Cf. Humboldt's *Views of Nature*, p. 125. — ED.]

The means of communication in so mountainous a country were an important department in the administration of the Incas. Excellent roads for foot passengers radiated from Cuzco to the remotest portions of the empire. The Inca roads were level and well paved, and continued for hundreds of leagues. Rocks were broken up and levelled when it was necessary, ravines were filled, and excavations were made in mountain sides. Velasco measured the width of the Inca roads, and found them to be from six to seven yards, sufficiently wide when only foot passengers used them. Gomara gives them a breadth of twenty-five feet, and says that they were paved with smooth stones. These measurements were confirmed by Humboldt as regards the roads in the Andes. The road along the coast was forty feet wide, according to Zarate. The Inca himself travelled in a litter, borne by mountaineers from the districts of Soras and Lucanas. *Corpa-huasi*, or resthouses, were erected at intervals, and the government messengers, or *chasquis*, ran with wonderful celerity from one of these stations to another, where he delivered his message, or *quipu*, to the next runner. Thus news was brought to the central government from all parts of the empire with extraordinary rapidity, and the Inca ate fresh fish at Cuzco which had been



FROM HELPS.*

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* [Cf. Humboldt's account in *Views of Nature*, English transl., 393–95, 407–9, 412. Marcoy says the usual descriptions of the ancient roads are exaggerations (vol. i. 206). — Ed.]

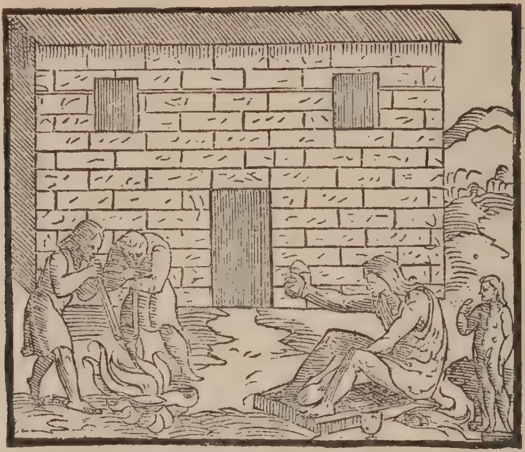
ught in the Pacific, three hundred miles away, on the previous day. Store-
ouses, with arms, clothing, and provisions for the soldiers, were also built
intervals along the roads, so that an army could be concentrated at any
oint without previous preparation.

Closely connected with the facilities for communication, which were so
dmirably established by the Incas, was the system of moving colonies from
ne part of the empire to another. The evils of minute subdivision were
ius avoided, political objects were often secured, and the comfort of the
eople was increased by the exchange of products. The colonists were
alled *mitimaes.* For example, the people of the Collao, round Lake Titi-
aca, lived in a region where corn would not ripen, and if confined to the
roducts of their native land they must have subsisted solely on potatoes,
uinua, and llama flesh. But the Incas established colonies from their vil-
ages in the coast valleys of Tacna and Moquegua, and in the forests to the
astward. There was constant intercourse, and while the mother country
upplied *chuñus* or preserved potatoes, *charqui* or dried meat, and wool to
he colonists, there came back in return, corn and fruits and cotton cloth
om the coast, and the beloved coca from the forests.

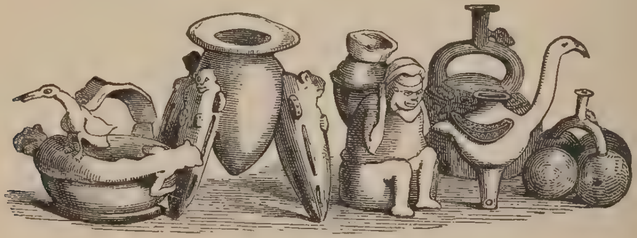
Military colonies were also established on the frontiers, and the armies of
ie Incas, in their marches and extensive travels, promoted the circulation
f knowledge, while this service also gave employment to the surplus agri-
ultural population. Soldiers were brought from all parts of the empire,
nd each tribe or *ayllu* was distinguished by its arms, but more especially by
s head-dress. The Inca wore the crimson *llautu*, or fringe; the *Apu*, or
eneral, wore a yellow *llautu.* One tribe wore a puma's head; the Cañaris
ere adorned with the feathers of macaws, the Huacrachucus with the
orns of deer, the Pocras and Huamanchucus with a falcon's wing feath-
rs. The arms of the Incas and Chancas consisted of a copper axe, called
hampi; a lance pointed with bronze, called *chuqui;* and a pole with a
ronze or stone head in the shape of a six-pointed star, used as a club,
alled *macana.* The Collas and Quichuas came with slings and *bolas*, the
ntis with bows and arrows. Defensive armor consisted of a *hualcanca* or
hield, the *umachucu* or head-dress, and sometimes a breastplate. The
erfect order prevailing in civil life was part of the same system which
nforced strict discipline in the army; and ultimately the Inca troops were
resistible against any enemy that could bring an opposing force into the
eld. Only when the Incas fought against each other, as in the last civil
ar, could the result be long doubtful.

The artificers engaged in the numerous arts and on public works subsisted
n the government share of the produce. The artists who fashioned the
tones of the Sillustani towers or of the Cuzco temple with scientific accu-
acy before they were fixed in their places, were wholly devoted to their
rt. Food and clothing had to be provided for them, and for the miners,
veavers, and potters. Gold was obtained by the Incas in immense quanti-
ies by washing the sands of the rivers which flowed through the forest-

covered province of Caravaya. Silver was extracted from the ore by means of blasting-furnaces called *huayra;* for, although quicksilver was known and used as a coloring material, its properties for refining silver do not appear to have been discovered. Copper was abundant in the Collao and in Charcas, and tin was found in the hills on the east side of Lake Titicaca, which enabled the Peruvians to use bronze very extensively.[1] Lead was



PERUVIAN METAL WORKERS.*



PERUVIAN POTTERY.†

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[1] A bronze instrument found at Sorata had the following composition, according to an analysis by David Forbes: —

Copper	88.05
Tin	11.42
Iron	.36
Silver	.17
	100.00

Humboldt gave the composition of a bronze instrument found at Vilcabamba as follows: —

Copper	94
Tin	6
	100

* [Reproduction of a cut in Benzoni's *Historia del Mondo Nuovo* (1565). Cf. D. Wilson's *Prehistoric Man*, i. ch. 9, on the Peruvian metal-workers. — ED.]

† [The tripod in this group is from Panama, the others are Peruvian. This cut follows an engraving in Wilson's *Prehistoric Man*, ii. 41. There are numerous cuts in Wiener, p. 589, etc. Cf. Stevens's *Flint Chips*, p. 271. — ED.]

also known to them. Skilful workers in metals fashioned the vases and other utensils for the use of the Inca and of the temples, forged the arms of the soldiers and the implements of husbandry, and stamped or chased the ceremonial breastplates, *topus*, girdles, and chains. The bronze and copper warlike instruments, which were star-shaped and used as clubs, fixed at the ends of staves, were cast in moulds. One of these club-heads, now in the Cambridge collection, has six rays, broad and flat, and terminating in rounded points. Each ray represents a human head, the face on one surface and the hair and back of the head on the other. This specimen was undoubtedly cast in a mould. "It is," says Professor Putnam, "a good illustration of the knowledge which the ancient Peruvians had of the methods of working metals and of the difficult art of casting copper."[1]

Spinning, weaving, and dyeing were arts which were sources of employment to a great number of people, owing to the quantity and variety of the fabrics for which there was a demand. There were rich dresses interwoven with gold or made of gold thread; fine woollen mantles, or tunics, ornamented with borders of small square gold and silver plates; colored cotton cloths worked in complicated patterns; and fabrics of aloe fibre and sheeps' sinews for breeches. Coarser cloths of llāma wool were also made in vast quantities. But the potter's art was perhaps the one which exercised the inventive faculties of the Peruvian artist to the greatest extent. The silver and gold utensils, with the exception of a very few cups and vases, have nearly all been melted down. But specimens of pottery, found buried with the dead in great profusion, are abundant. They are to be seen in every museum, and at Berlin and Madrid the collections are very large.[2] Varied as are the forms to be found in the pottery of the Incas, and elegant as are many of the designs, it must be acknowledged that they are inferior in these respects to the specimens of the plastic art of the Chimu and other people of the Peruvian coast. The Incas, however, displayed a considerable play of fancy in their

PERUVIAN DRINKING VESSEL.*

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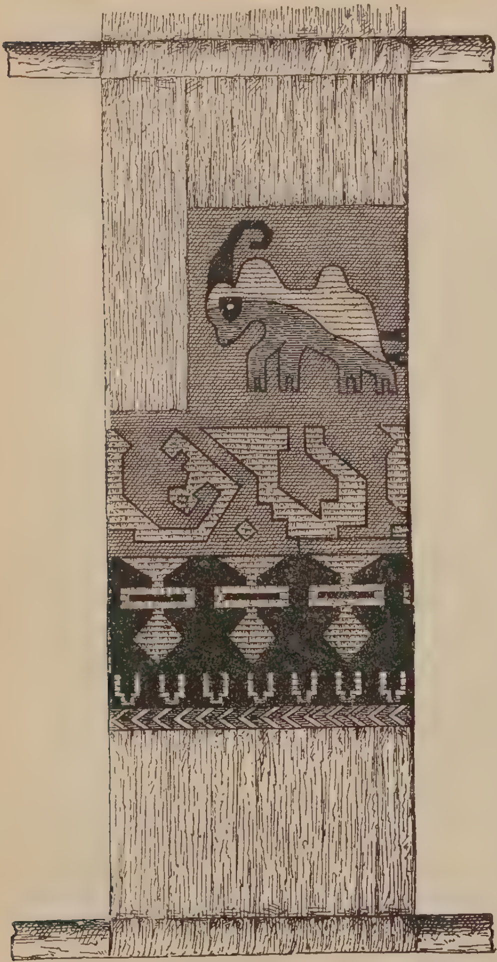
[1] *Fifteenth Report of the Trustees of the Peabody Museum of Ethnology*, vol. iii. 2, p. 140 (Cambridge, 1882).

[2] [Cf. the plates in the *Necropolis of Ancon*, and De la Rada's *Les Vases Péruviens du Musée Archéologique de Madrid*, in the *Compte Rendu* (p. 236) of the Copenhagen meeting of the Congrès des Américanistes. — ED.]

* [After a cut in Wilson's *Prehistoric Man*, ii. 45; showing a cup of the Beckford collection. "There is an individuality in the head, at once suggestive of portraiture." — ED.]

designs. Many of the vases were moulded into forms to represent animals, fruit, and corn, and were used as *conopas*, or household gods. Others took the shape of human heads or feet, or were made double or quadruple, with a single neck branching from below. Some were for interment with the *malquis*, others for household use.[1] Professor Wilson, who carefully examined several collections of ancient Peruvian pottery, formed a high opinion of their merit. "Some of the specimens," he wrote, "are purposely grotesque, and by no means devoid of true comic fancy; while, in the greater number, the endless variety of combinations of animate and inanimate forms, ingeniously rendered subservient to the requirements of utility, exhibit fertility of thought in the designer, and a lively perceptive faculty in those for whom he wrought."[2]



UNFINISHED CLOTH FOUND AT PACHACAMAC.*

There is a great deal more to learn respecting this marvellous Inca civilization Recent publications have within the last few years thrown fresh and unexpected light upon it. There may be more information still undiscovered o inedited. As yet we can understand the wonderful story only imperfectly, and see it by doubtful lights. Respecting some questions, even of the first importance, we are still able only to make guesses and weigh probabilities. Yet, though there is much that is uncertain as regards historical and other points, we have before us the clear general outlines of a very extraordinary picture. In no other part of America had civilization attained to such a height among indigenous races. In no other part of the world has the administration of a purely socialistic government been attempted. The Incas not only made the attempt, but succeeded.

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[1] It is believed that some of the heads on the vases were intended as likenesses. One especially, in a collection at Cuzco, is intended, according to native tradition, for a portrait of Rumi-ñaui, a character in the drama of Ollantay.

[2] *Prehistoric Man*, i. p. 110. A great number of specimens of Peruvian pottery are given in the works of Castelnau, Wiener, Squier, and i the atlas of the *Antigüedades Peruanas*. [C also Marcoy's *Voyage*; *Mémoires de la Soc. de Antiquaires du Nord* (two plates); J. E. Pric in the *Anthropological Journal*, iii. 100, an many of the books of Peruvian travel. — Ed.]

* [After a cut in Wiener, *Pérou et Bolivie*, p. 65. — Ed.]

CRITICAL ESSAY ON THE SOURCES OF INFORMATION.

THE student of Inca civilization will first seek for information from those Spanish writers who lived during or immediately after the Spanish conquest. They were able to converse with natives who actually flourished before the disruption of the Inca empire, and who saw the working of the Inca system before the destruction and ruin had well commenced. He will next turn to those laborious inquirers and commentators who, although not living so near the time, were able to collect traditions and other information from natives who had carefully preserved all that had been handed down by their fathers.[1] These two classes include the writers of the sixteenth and seventeenth centuries. The authors who have occupied themselves with the Quichua language and the literature of the Incas have produced works a knowledge of which is essential to an adequate study of the subject.[2] Lastly, a consideration of the publications of modern travellers and scholars, who throw light on the writings of early chroniclers, or describe the present appearance of ancient remains, will show the existing position of a survey still far from complete, and the interest and charm of which invite further investigation and research.

Foremost in the first class of writers on Peru is Pedro de Cieza de Leon. A general account of his works will be found elsewhere,[3] and the present notice will therefore be confined to an estimate of the labors of this author, so far as they relate to Inca history and civilization. Cieza de Leon conceived the desire to write an account of the strange things that were to be seen in the New World, at an early period of his service as a soldier. "Neither fatigue," he tells us, "nor the ruggedness of the country, nor the mountains and rivers, nor intolerable hunger and suffering, have ever been sufficient to obstruct my two duties, namely, writing and following my flag and my captain without fault." He finished the First Part of his chronicle in September, 1550, when he was thirty-two years of age. It is mainly a geographical description of the country, containing many pieces of information, such as the account of the Inca roads and bridges, which are of great value. But it is to the Second Part that we owe much of our knowledge of Inca civilization. From incidental notices we learn how diligently young Cieza de Leon studied the history and government of the Incas, after he had written his picturesque description of the country in his First Part. He often asked the Indians what they knew of their condition before the Incas became their lords. He inquired into the traditions of the people from the chiefs of the villages. In 1550 he went to Cuzco with the express purpose of collecting information, and conferred diligently with one of the surviving descendants of the Inca Huayna Ccapac. Cieza de Leon's plan, for the second part of his work, was first to review the system of government of the Incas, and then to narrate the events of the reign of each sovereign. He spared no pains to obtain the best and most authentic information, and his sympathy with the conquered people, and generous appreciation of their many good and noble qualities, give a special charm to his narrative. He bears striking evidence to the historical faculty possessed by the learned men at the court of the Incas. After saying that on the death of a sovereign the chroniclers related the events of his reign to his successor, he adds: "They could well do this, for there were among them some men with good memories, sound judgments, and subtle genius, and full of reasoning power, as we can bear witness who have heard them even in these our days." Cieza de Leon is certainly one of the most important authorities on Inca history and civilization, whether we consider his peculiar advantages, his diligence and ability, or his character as a conscientious historian.

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[1] [The narratives of the Spanish conquest necessarily throw much light, sometimes more than incidentally, upon the earlier history of the region. These sources are characterized in the critical essay appended to chapter viii. of Vol. II., and embrace bibliographical accounts of Herrera, Gomara, Oviedo, Andagoya, Xeres, Fernandez, Oliva, not to name others of less moment. — ED.]

[2] See Note II. following this essay.

[3] Vol. II. p. 573.

Juan José de Betanzos, like Cieza de Leon, was one of the soldiers of the conquest. He married a daughter of Atahualpa, and became a citizen at Cuzco, where he devoted his time to the study of Quichua. He was appointed official interpreter to the Audience and to successive viceroys, and he wrote a *Doctrina* and two vocabularies which are now lost. In 1558 he was appointed by the viceroy Marquis of Cañete, to treat with the Inca Sayri Tupac,[1] who had taken refuge in the fastness of Vilcabamba; and by the Governor Lope Garcia de Castro, to conduct a similar negotiation with Titu Cusi Yupanqui, the brother of Sayri Tupac. He was successful in both missions. He wrote his most valuable work, the *Suma y Narracion de los Incas*, which was finished in the year 1551, by order of the Viceroy Don Antonio de Mendoza, but its publication was prevented by the death of the viceroy. It remained in manuscript, and its existence was first made known by the Dominican monk Gregorio Garcia in 1607, whose own work will be referred to presently. Garcia said that the history of Betanzos relating to the origin, descent, succession, and wars of the Incas was in his possession, and had been of great use to him. Leon Pinelo and Antonio also gave brief notices of the manuscript, but it is only twice cited by Prescott. The great historian probably obtained a copy of a manuscript in the Escurial, through Obadiah Rich. This manuscript is bound up with the second part of Cieza de Leon. It is not, however, the whole work which Garcia appears to have possessed, but only the first eighteen chapters, and the last incomplete. Such as it is, it was edited and printed for the *Biblioteca Hispano-Ultramarina*, by Don Márcos Jiménez de la Espada, in 1880.[2]

The work of Betanzos differs from that of Cieza de Leon, because while the latter displays a diligence and discretion in collecting information which give it great weight as an authority, the former is imbued with the very spirit of the natives. The narrative of the preparation of young Yupanqui for the death-struggle with the Chancas is life-like in its picturesque vigor. Betanzos has portrayed native feeling and character as no other Spaniard has, or probably could have done. Married to an Inca princess, and intimately conversant with the language, this most scholarly of the conquerors is only second to Cieza de Leon as an authority. The date of his death is unknown.

Betanzos and Cieza de Leon, with Pedro Pizarro, are the writers among the conquerors whose works have been preserved. But these three martial scholars by no means stand alone among their comrades as authors. Several other companions of Pizarro wrote narratives, which unfortunately have been lost.[3] It is indeed surprising that the desire to record some account of the native civilization they had discovered should have been so prevalent among the conquerors. The fact scarcely justifies the term "rude soldiery," which is so often applied to the discoverers of Peru.

The works of the soldier conquerors are certainly not less valuable than those of the lawyers and priests who followed on their heels. Yet these latter treat the subject from somewhat different points of view, and thus furnish supplemental information. The works of four lawyers of the era of the conquest have been preserved, and those of another are lost. Of these, the writings of the Licentiate Polo de Ondegardo are undoubtedly the most important. This learned jurist accompanied the president, La Gasca, in his campaign against Gonzalo Pizarro, having arrived in Peru a few years previously, and he subsequently occupied the post of corregidor at Cuzco. Serving under the Viceroy Don Francisco de Toledo, he was constantly consulted by that acute but narrow-minded statesman. His duties thus led Polo de Ondegardo to make diligent researches into the laws and administration of the Incas, with a view to the adoption of all that was applicable to the new régime. But his knowledge of the language was limited, and it is necessary to receive many of his statements with caution. His two *Relaciones*, the first dedicated to the Viceroy Marques de Cañete (1561), and the second finished in 1570,[1] are in the form of answers to questions on financial revenue and other administrative points. They include information respecting the social customs, religious rites, and laws of the Incas. These *Relaciones* are still in manuscript. Another report by Polo de Ondegardo exists in the National Library at Madrid,[2] and has been translated into English for the Hakluyt Society.[3] In this treatise the learned corregidor describes the principles on which the Inca conquests were made, the division and tenures of land, the system of tribute, the regulations for preserving game and for forest conservancy, and the administrative details. Here and there he points out a way in which the legislation of the Incas might be imitated and utilized by their conquerors.[4]

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[1] Cf. Vol. II. p. 546.

[2] *Suma y narracion de los Incas, que los Indios llamaron Capaccuna que fueron señores de la ciudad del Cuzco y de todo lo á ella subjeto. Publícala M. Jiménez de la Espada* (Madrid, 1880).

[3] We learn from Leon Pinelo that one of the famous band of adventurers who crossed the line drawn by Pizarro on the sands of Gallo was an author (Antonio, ii. 645). But the *Relacion de la tierra que descubrió Don Francisco Pizarro*, by Diego de Truxillo, remained in manuscript and is lost to us. Francisco de Chaves, one of the most respected of the companions of Pizarro, who strove to save the life of Atahualpa, and was an intimate friend of the Inca's brother, was also an author. Chaves is honorably distinguished for his moderation and humanity. He lost his own life in defending the staircase against the assassins of Pizarro. He left behind a copious narrative, and his intimate relations with the Indians make it likely that it contained much valuable information respecting Inca civilization. It was inherited by the author's friend and relation, Luis Valera, but it was never printed, and the manuscript is now lost. The works of Palomino, a companion of Belalcazar, who wrote on the kingdom of Quito, are also lost, with the exception of a fragment preserved in the *Breve Informe* of Las Casas. Other soldiers of the conquest, Tomas Vasquez, Francisco de Villacastin, Garcia de Melo, and Alonso de Mesa, are mentioned as men who had studied and were learned in all matters relating to Inca antiquities; but none of their writings have been preserved.

Agustin de Zarate, though a lawyer by profession, had been employed for some years in the financial department of the Spanish government before he went out to Peru with the Viceroy Blasco Nuñez to examine into the accounts of the colony. On his return to Spain he was entrusted with a similar mission in Flanders. His *Provincia del Peru* was first published at Antwerp in 1555.[5] Unacquainted with the native languages, and ignorant of the true significance of much that he was told, Zarate was yet a shrewd observer, and his evidence is valuable as regards what came under his own immediate observation. He gives one of the best descriptions of the Inca roads.

The *Relacion* of Fernando de Santillan is a work which may be classed with the reports of Polo de Ondegardo, and its author had equal advantages in collecting information. Going out to Peru as one of the judges of the Audiencia in 1550,[6] Santillan was for a short time at the head of the government, after the death of the Viceroy Mendoza, and he took the field to suppress the rebellion of Giron. He afterwards served in Chile and at Quito, where he was commissioned to establish the court of justice. Returning to Spain, he took orders, and was appointed Bishop of the La Plata, but died at Lima, on his way to his distant see, in 1576. The *Relacion* of Santillan remained in manuscript, in the library of the Escurial, until it was edited by Don Márcos Jiménez de la Espada in 1879. This report appears to have been prepared in obedience to a decree desiring the judges of Lima to examine aged and learned Indians regarding the administrative system of the Incas. The report of Santillan is mainly devoted to a discussion of the laws and customs relating to the collection of tribute. He bears testimony to the excellence of the Inca government, and to the wretched condition to which the country had since been reduced by Spanish misrule.

The work of the Licentiate Juan de Matienzo, a contemporary of Ondegardo, entitled *Gobierno de el Peru*, is still in manuscript. Like Santillan and Ondegardo, Matienzo discusses the ancient institutions with a view to the organization of the best possible system under Spanish rule.[7]

Melchor Bravo de Saravia, another judge of the Royal Audience at Lima, and a contemporary of Santillan, is said to have written a work on the antiquities of Peru; but it is either lost or has not yet been placed within reach of the student. It is referred to by Velasco. Cieza de Leon mentions, at the end of his Second Part, that his own work had been perused by the learned judges Hernando de Santillan and Bravo de Saravia.

While the lawyers turned their attention chiefly to the civil administration of the conquered people, the priests naturally studied the religious beliefs and languages of the various tribes, and collected their historical traditions. The best and most accomplished of these sacerdotal authors appears to have been Blas Valera, judging from the fragments of his writings which have escaped destruction. He was a native of Peru, born at Chachapoyas in 1551, where his father, Luis Valera,[8] one of the early conquerors, had settled. Young Blas was received into the Company of Jesus at Lima when only seventeen years of age, and, as he was of Inca race on the mother's side, he soon became useful at the College in Cuzco from his proficiency in the native languages. He did missionary work in the surrounding villages, and acquired a profound knowledge of the history and institutions of the Incas. Eventually he completed a work on the subject in Latin, and was sent to Spain by his

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[1] But not dedicated to the Conde de Nieva, as Prescott states, for that viceroy died in 1564.

[2] B, 135.

[3] Report by Polo de Ondegardo, translated by Clements R. Markham (Hakluyt Society, 1873).

[4] [See Vol. II. p. 571. — Ed.]

[5] [See Vol. II. p. 567–8, for bibliography. — Ed.]

[6] [See Vol. II. p. 542. — Ed.]

[7] Additional MSS. 5469, British Museum, folio, p. 274. See Vol. II. p. 571.

[8] See *ante*, p. 6.

Jesuit superiors with a view to its publication. Unfortunately the greater part of his manuscript was burnt at the sack of Cadiz by the Earl of Essex in 1596, and Blas Valera himself died shortly afterwards. The fragments that were rescued fell into the hands of Garcilasso de la Vega, who translated them into Spanish, and printed them in his *Commentaries*. It is to Blas Valera that we owe the preservation of two specimens of Inca poetry and an estimate of Inca chronology. He has also recorded the traditional sayings of several Inca sovereigns, and among his fragments there are very interesting chapters on the religion, the laws and ordinances, and the language of the Incas, and on the vegetable products and medicinal drugs of Peru. These fragments are evidence that Blas Valera was an elegant scholar, a keen observer, and thoroughly master of his subject. They enhance the feeling of regret at the irreparable loss that we have sustained by the destruction of the rest of his work.

Next to Blas Valera, the most important authority on Inca civilization, among the Spanish priests who were in Peru during the sixteenth century, is undoubtedly Christoval de Molina. He was chaplain to the hospital for natives at Cuzco, and his work was written between 1570 and 1584, the period embraced by the episcopate of Dr. Sebastian de Artaun, to whom it is dedicated. Molina gives minute and detailed accounts of the ceremonies performed at all the religious festivals throughout the year, with the prayers used by the priests on each occasion. Out of the fourteen prayers preserved by Molina, four are addressed to the Supreme Being, two to the sun, the rest to these and other deities combined. His mastery of the Quichua language, his intimacy with the native chiefs and learned men, and his long residence at Cuzco give Molina a very high place as an authority on Inca civilization. His work has remained in manuscript,[1] but it has been translated into English and printed for the Hakluyt Society.[2]

Molina, in his dedicatory address to Bishop Artaun, mentions a previous narrative which he had submitted, on the origin, history, and government of the Incas. Fortunately this account was preserved by Miguel Cavello Balboa, an author who wrote at Quito between 1576 and 1586. Balboa, a soldier who had taken orders late in life, went out to America in 1566, and settled at Quito, where he devoted himself to the preparation and writing of a work which he entitled *Miscellanea Austral*. It is in three parts; but only the third, comprising about half the work, relates to Peru. Balboa tells us that his authority for the early Inca traditions and history was the learned Christoval de Molina, and this gives special value to Balboa's work. Moreover, Balboa is the only authority who gives any account of the origin of the coast people, and he also supplies a detailed narrative of the war between Huascar and Atahualpa. The portion relating to Peru was translated into French and published by Ternaux Compans in 1840.[3]

The Jesuits who arrived in Peru during the latter part of the sixteenth century were devoted to missionary labors, and gave an impetus to the study of the native languages and history. Among the most learned was José de Acosta, who sailed for Peru in 1570. At the early age of thirty-five, Acosta was chosen to be Provincial of the Jesuits in Peru, and his duties required him to travel over every part of the country. His great learning, which is displayed in his various theological works, qualified him for the task of writing his *Natural and Moral History of the Indies*, the value of which is increased by the author's personal acquaintance with the countries and their inhabitants. Acosta went home in the Spanish fleet of 1587, and his first care, on his return to Spain, was to make arrangements for the publication of his manuscripts. The results of his South American researches first saw the light at Salamanca, in Latin, in 1588 and 1589. The complete work in Spanish, *Historia Natural y Moral de las Indias*, was published at Seville in 1590. Its success was never doubtful.[4] In his latter years Acosta presided over the Jesuits' College at Salamanca, where he died in his sixtieth year, on February 15, 1600.[5] In spite of the learning and diligence of Acosta and of the great popularity of his work, it cannot be considered one of the most valuable contributions towards a knowledge of Inca civilization. The information it contains is often inaccurate, the details are less complete than in most of the other works written soon after the conquest,[6] and a want of knowledge of the language is frequently made apparent. The best chapters are those devoted to the animal and vegetable products of Peru; and Feyjoo calls Acosta the Pliny of the New World.[1]

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[1] National Library at Madrid, B, 135.

[2] *The fables and rites of the Incas, by Christoval de Molina*, translated and edited by Clements R. Markham (Hakluyt Society, 1873).

[3] [See Vol. II. p. 576. — ED.]

[4] For the bibliography of Acosta, see Vol. II. p. 420, 421.

[5] Notices of the life and works of Acosta have been given in biographical dictionaries, and in histories of the Jesuits. An excellent biography will be found in a work entitled *Los Antiquos Jesuitas del Peru*, by Don Enrique Torres Saldamando, which was published at Lima in 1885. See also an introductory notice in Markham's edition (1880).

[6] Thus his lists of the Incas, of the names of months and of festivals, are very defective; and his list of names of stars, though copied from Balboa without acknowledgment, is incomplete.

The Licentiate Fernando Montesinos, a native of Osuna, was one of the most diligent of all those who in early times made researches into the history and traditions of the Incas. Montesinos went out in the fleet which took the Viceroy Count of Chinchon to Peru, arriving early in the year 1629. Having landed at Payta, Montesinos travelled southwards towards the capital until he reached the city of Truxillo. At that time Dr. Carlos Marcelino Corni was Bishop of Truxillo.[2] Hearing of the virtue and learning of Montesinos, Dr. Corni begged that he might be allowed to stop at Truxillo, and take charge of the Jesuits' College which the good bishop had established there. Montesinos remained at Truxillo until the death of Bishop Corni, in October, 1629,[3] and then proceeded to Potosi, where he gave his attention to improvements in the methods of extracting silver. He wrote a book on the subject, which was printed at Lima, and also compiled a code of ordinances for mines with a view to lessening disputes, which was officially approved. Returning to the capital, he lived for several years at Lima as chaplain of one of the smaller churches, and devoted all his energies to the preparation of a history of Peru. Making Lima his headquarters, the indefatigable student undertook excursions into all parts of the country, wherever he heard of learned natives to be consulted, of historical documents to be copied, or of information to be found. He travelled over 1,500 leagues, from Quito to Potosi. In 1639 he was employed to write an account of the famous Auto de Fé which was celebrated at Lima in that year. His two great historical works are entitled *Memorias Antiguas Historiales del Peru*, and *Anales ó Memorias Nuevas del Peru*.[4] From Lima Montesinos proceeded to Quito as "Visitador General," with very full powers conferred by the bishop.

The work of Montesinos remained in manuscript until it was translated into French by M. Ternaux Compans in 1840, with the title *Mémoires Historiques sur l'ancien Pérou*. In 1882 the Spanish text was very ably edited by Don Márcos Jiménez de la Espada.[5] Montesinos gives the history of several dynasties which preceded the rise of the Incas, enumerating upwards of a hundred sovereigns. He professes to have acquired a knowledge of the ancient records through the interpretations of the *quipus*, communicated to him by learned natives. It was long supposed that the accounts of these earlier sovereigns received no corroboration from any other authority. This furnished legitimate grounds for discrediting Montesinos. But a narrative, as old or older than that of the licentiate, has recently been brought to light, in which at least two of the ancient sovereigns in the lists of Montesinos are incidentally referred to. This circumstance alters the aspect of the question, and places the *Memorias Antiquas del Peru* in a higher position as an authority; for it proves that the very ancient traditions which Montesinos professed to have received from the natives had previously been communicated to one other independent inquirer at least.

This independent inquirer is an author whose valuable work has recently been edited by Don Márcos Jiménez de la Espada.[6] His narrative is anonymous, but internal evidence establishes the fact that he was a Jesuit, and probably one of the first who arrived in Peru in 1568, although he appears to have written his work many years afterwards. The anonymous Jesuit supplies information respecting works on Peruvian civilization which are lost to us. He describes the temples, the orders of the priesthood, the sacrifices and religious ceremonies, explaining the origin of the erroneous statement that human sacrifices were offered up. He also gives the code of criminal law and the customs which prevailed in civil life, and concludes his work with a short treatise on the conversion of the Indians.

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[1] Acosta was the chief source whence the civilized world of the seventeenth and eighteenth centuries, beyond the limits of Spain, derived a knowledge of Peruvian civilization. Purchas, in his *Pilgrimage* (ed. of 1623, lib. v. p. 869; vi. p. 931), quotes largely from the learned Jesuit, and an abstract of his work is given in Harris's *Voyages* (lib. i. cap. xiii. pp. 751–799). He is much relied upon as an authority by Robertson, and is quoted 19 times in Prescott's *Conquest of Peru*, thus taking the fourth place as an authority with regard to that work, since Garcilasso is quoted 89 times, Cieza de Leon 45, Ondegardo 41, Acosta 19.

[2] Of whose parentage a pleasing story is told. He was a native of Truxillo, of French parents, his father being a metal-founder. When he was a small boy his father said to him, "Study, little Charles, study! and this bell that I am founding shall be rung for you when you are the bishop." ("Estudiar, Carlete, estudiar! que con esta campana te han de repicar cuando seas obispo.") Dr. Corni rose to be a prelate of great virtue and erudition, and an eloquent preacher. At last he became Bishop of Truxillo in 1620, and when he heard the chimes which were rung on his approach to the city, he said, "That bell which excels all the others was founded by my father." ("Aquella campana que sobresale entre las demas le fundio mi padre.")

[3] *Papeles Varios de Indias.* MS. Brit. Mus.

[4] This last work is devoted to the Spanish conquest.

[5] In the series entitled *Coleccion de libros Españoles raros ó curiosos*, tom xvi. (Madrid, 1882.) [The original manuscript is in the library of the Real Academia de Historia at Madrid. Brasseur de Bourbourg had a copy (*Pinart Catalogue*, No. 638; *Bibl. Mex. Guat.*, p. 103), which appeared also in the Del Monte sale (N. Y., June, 1888, — *Catalogue*, iii. no. 554). Cf. the present *History*, II. pp. 570, 577. — Ed.]

[6] *Relacion de las costumbres antiquas de los naturales del Peru. Anónima.* The original is among the manuscript in the National Library at Madrid. It was published as part of a volume entitled *Tres Relaciones de Antigüedades Peruanas. Publícalas el Ministerio de Fomento* (Madrid, 1879).

The efforts of the viceroys and archbishops of Lima during the early part of the seventeenth century to extirpate idolatry, particularly in the province of Lima, led to the preparation of reports by the priests who were entrusted with the duty of extirpation, which contain much curious information. These were the Fathers Hernando de Avendaño, Francisco de Avila, Luis de Teruel, and Pablo José de Arriaga. Avendaño, in addition to his sermons in Quichua, wrote an account of the idolatries of the Indians, — *Relacion de las Idolatrias de los Indios*, — which is still in manuscript. Avila was employed in the province of Huarochiri, and in 1608 he wrote a report on the idols and superstitions of the people, including some exceedingly curious religious legends. He appears to have written down the original evidence from the mouths of the Indians in Quichua, intending to translate it into Spanish. But he seems to have completed only six chapters in Spanish; or perhaps the translation is by another hand. There are still thirty-one chapters in Quichua awaiting the labors of some learned Peruvian scholar. Rising Quichua students, of whom there are not a few in Peru, could undertake no more useful work. This important report of Avila is comprised in a manuscript volume in the National Library at Madrid, and the six Spanish chapters have been translated and printed for the Hakluyt Society.[1] Teruel was the friend and companion of Avila. He also wrote a treatise on native idolatries,[2] and another against idolatry,[3] in which he discusses the origin of the coast people. Arriaga wrote a still more valuable work on the extirpation of idolatry, which was printed at Lima in 1621, and which relates the religious beliefs and practices of the people in minute detail.[4]

Antiquarian treasures of great value are buried in the works of ecclesiastics, the principal objects of which are the record of the deeds of one or other of the religious fraternities. The most important of these is the *Coronica Moralizada del orden de San Augustin en el Peru; del Padre Antonio de la Calancha* (1638–1653),[5] which is a precious storehouse of details respecting the manners and customs of the Indians and the topography of the country. Calancha also gives the most accurate Inca calendar. Of less value is the chronicle of the Franciscans, by Diego de Cordova y Salinas, published at Madrid in 1643.

A work, the title of which gives even less promise of containing profitable information, is the history of the miraculous image of a virgin at Copacabana, by Fray Alonso Ramos Gavilan. Yet it throws unexpected light on the movements of the *mitimaes*, or Inca colonists; it gives fresh details respecting the consecrated virgins, the sacrifices, and the deities worshipped in the Collao, and supplies another version of the Inca calendar.[6]

The work on the origin of the Indians of the New World, by Fray Gregorio Garcia,[7] who travelled extensively in the Spanish colonies, is valuable, and to Garcia we owe the first notice of the priceless narrative of Betanzos. His separate work on the Incas is lost to us.[8] Friar Martin de Múrua, a native of Guernica, in Biscay, was an ecclesiastic of some eminence in Peru. He wrote a general history of the Incas, which was copied by Dr. Muñoz for his collection, and Leon Pinelo says that the manuscript was illustrated with colored drawings of insignia and dresses, and portraits of the Incas.[9]

The principal writers on Inca civilization in e century immediately succeeding the conquest, f the three different professions, — soldiers, wyers, and priests, — have now been passed review. Attention must next be given to e native writers who followed in the wake f Blas Valera. First among these is the Inca arcilasso de la Vega, an author whose name probably better known to the general reader an that of any other who has written on the ame subject. Among the Spanish conquer- rs who arrived in Peru in 1534 was Garci- sso de la Vega, a cavalier of very noble neage,[1] who settled at Cuzco, and was mar- ed to an Inca princess named Chimpa Ocllo, iece of the Inca Huayna Ccapac. Their son, e future historian, was born at Cuzco in 539, and his earliest recollections were con- ected with the stirring events of the civil ar between Gonzalo Pizarro and the presi- ent La Gasca, in 1548. His mother died oon afterwards, probably in 1550, and his ather married again. The boy was much in e society of his mother's kindred, and he ften heard them talk over the times of the ncas, and repeat their historical traditions. or was his education neglected; for the ood Canon Juan de Cuellar read Latin with e half-caste sons of the citizens of Cuzco r nearly two years, amidst all the turmoil f the civil wars. As he grew up, he was em- loyed by his father to visit his estates, and he avelled over most parts of Peru. The elder arcilasso de la Vega died in 1560, and the oung orphan resolved to seek his fortune in e land of his fathers. On his arrival in Spain e received patronage and kindness from his pa- ernal relatives, became a captain in the army f Philip II, and when he retired, late in life, he ook up his abode in lodgings at Cordova, and evoted himself to literary pursuits. His first roduction was a translation from the Italian of The Dialogues of Love," and in 1591 he com- leted his narrative of the expedition of Her- ando de Soto to Florida.[2]

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[1] *Narrative of the errors, false gods, and other superstitions and diabolical rites in which the Indians of the province of Huarochiri lived in ancient times, collected by Dr. Francisco de Avila, 1608: translated and edited by Clements R. Markham* (Hakluyt Society, 1872). [There was a copy of the Spanish MS. in the E. G. Squier sale, 1876, no. 726. — Ed.]

[2] *Tratado de las idolatrias de los Indios del Peru.* This work is mentioned by Leon Pinelo as "una obra grande y de mucha erudicion," but it was never printed.

[3] *Contra idolatriam*, MS.

[4] *Extirpacion de la idolatria del Peru, por el Padre Pablo Joseph de Arriaga* (Lima, 1621, pp. 137).

[5] [See Vol. II. p. 570. The *Historiæ Pervanæ ordinis Eremitarum S. P. Augustini libri octodecim* (*1651–52*) is mainly a translation of Calancha. Cf. Sabin, nos. 8760, 9870. — Ed.]

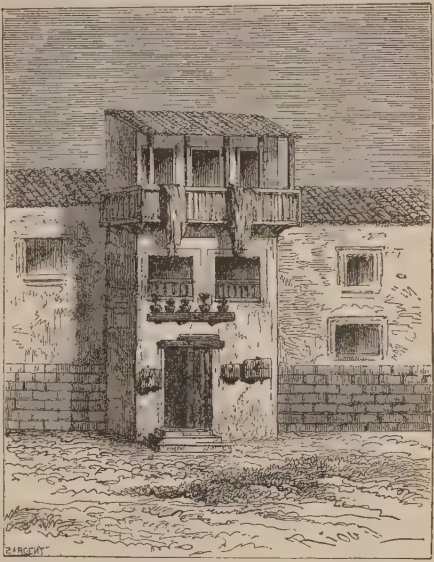
[6] *Historia de Copacabana y de su milagrosa imagen, escrita por el R. P. Fray Alonso Ramos Gavilan* (1620). The work of Ramos was reprinted from an incomplete copy at La Paz in 1860, and edited by Fr. Rafael Sans.

[7] *Origen de los Indios del Nuevo Mundo* (1607), and in Barcia (1729).

[8] *Monarquia de los Incas del Peru.* Antonio says of this work, "Tertium quod promiserat adhuc latet nempe."

[9] *Historia general del Peru, origen y descendencia de los Incas, pueblos y ciudades, por P. Fr. Martin de Múrua* (1618). [Cf. Markham's *Cieza's Travels*, Second Part, p. 12. — Ed.]

As years rolled on, the Inca began to think ore and more of the land of his birth. The emory of his boyish days, of the long evening hats with his Inca relations, came back to him his old age. He was as proud of his maternal escent from the mighty potentates of Peru as f the old Castilian connection on his father's de. It would seem that the appearance of everal books on the subject of his native land finally induced him to undertake a work in which, while recording its own reminiscences and the information he might collect, he could also comment on the statements of other authors. Hence the title of *Commentaries* which he gave to his work. Besides the fragments of the writings of Blas Valera, which enrich the pages of Garcilasso, the Inca quotes from Acosta, from Gomara, from Zarate, and from the First Part of Cieza de Leon.[3] He was fortunate in getting possession of the chapters of Blas Valera rescued from the sack of Cadiz. He also wrote to all his surviving schoolfellows for assistance, and received many traditions and detailed replies on other subjects from them. Thus Alcobasa forwarded an account of the ruins at Tiahuanacu, and another friend sent him the measurements of the great fortress at Cuzco.



HOUSE IN CUZCO IN WHICH GARCILASSO WAS BORN.*

The Inca Garcilasso de la Vega is, without doubt, the first authority on the civilization of his ancestors; but it is necessary to consider his qualifications and the exact value of his evidence. He had lived in Peru until his twentieth year; Quichua was his native language, and he had constantly heard the traditions of the Incas related and discussed by his mother's relations. But when he began to write he had been separated from these associations for upwards of thirty years. He received materials from Peru, enabling him to compose a connected historical narrative, which is not, however, very reliable. The true value of his work is derived from his own reminiscences, aroused by reading the books which are the subjects of his Commentary, and from his correspondence with friends in Peru. His memory was excellent, as is often proved when he corrects the mistakes of Acosta and others with diffidence, and is invariably right. He was not credulous, having regard to the age in which he lived; nor was he inclined to give the rein to his imagination. More than once we find him rejecting the fanciful etymologies of the authors whose works he criticises. His narratives of the battles and conquests of the early Incas often become tedious, and of this he is himself aware. He therefore intersperses them with more interesting chapters on the religious ceremonies, the domestic habits and customs, of the people, and on their advances in poetry, astronomy, music, medicine, and the arts. He often inserts an anecdote from the storehouse of his memory, or some personal reminiscence called forth by the subject on which he happens to be writing. His statements frequently receive undesigned corroboration from authors whose works he never saw. Thus his curious account of the water sacrifices, not mentioned by any other published authority, is verified by the full description of the same rite in the manuscript of Molina. On the other hand, the long absence of the Inca from his native country entailed upon him grave disadvantages. His boyish recollections, though deeply interesting, could not, from the nature of the case, provide him with critical knowledge. Hence the mistakes in his work are serious and of frequent occurrence. Dr. Villar has pointed out his total misconception of the Supreme Being of the Peruvians, and of the significance of the word "Uiracocha."[1] But, with all its shortcomings,[2] the work of the Inca Garcilasso de la Vega must ever be the main source of our knowledge, and without his pious labors the story of the Incas would lose more than half its interest.

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[1] He was a cousin of the poet of the same name, and of the dukes of Feria.

[2] See Vol. II. pp. 290, 575.

[3] The *Commentarios Reales* (Part I.) of Garcilassos de la Vega contain 21 quotations from Blas Valera, 30 om Cieza de Leon (first part), 27 from Acosta, 11 from Gomara, 9 from Zarate, 3 from the *Republica de las ndias Occidentales* of Fray Geronimo Roman, 2 from Fernandez, 4 from the Inca's schoolfellow Alcobasa, nd 1 from Juan Botero Benes.

* [After a cut in Marcoy, i. 219. Cf. Squier's *Peru*, p. 449. — Ed.]

The first part of his *Commentarios Reales*, which alone concerns the present subject, was published at Lisbon in 1607.[3] The author died at Cordova at the age of seventy-six, and was buried in the cathedral in 1616. He lived just long enough to accomplish his most cherished wish, and to complete the work at which he had steadily and lovingly labored for so many years.

Another Indian author wrote an account of the antiquities of Peru, at a time when the grandchildren of those who witnessed the conquest by the Spaniards were living. Unlike Garcilasso, this author never left the land of his birth, but he was not of Inca lineage. Don Juan de Santacruz Pachacuti Yamqui Salcamayhua was a native of the Collao, and descended from a family of local chiefs. His work is entitled *Relacion de Antigüedades deste Reyno del Peru.* It long remained in manuscript in the National Library at Madrid, until it was edited by Don Márcos Jiménez de la Espada in 1879. It had previously been translated into English and edited for the Hakluyt Society.[4] Salcamayhua gives the traditions of Inca history as they were handed down to the third generation after the conquest. Intimately acquainted with the language, and in a position to converse with the oldest recipients of native lore, he is able to record much that is untold elsewhere, and to confirm a great deal that is related by former authors. He has also preserved two prayers in Quichua, attributed to Manco Ccapac, the first Inca, and some others, which add to the number given by Molina. He also corroborates the important statement of Molina, that the great gold plate in the temple at Cuzco was intended to represent the Supreme Being, and not the sun. Salcamayhua is certainly a valuable addition to the authorities on Peruvian history.

While so many soldiers and priests and lawyers did their best to preserve a knowledge of Inca civilization, the Spanish government itself was not idle. The kings of Spain and their official advisers showed an anxiety to prevent the destruction of monuments and to collect historical and topographical information which is worthy of all praise. In 1585, orders were given to all the local authorities in Spanish America to transmit such information, and a circular, containing a series of interrogatories, was issued for their guidance. The result of this measure was that a great number of *Relaciones descriptivas* were received in Spain, and stored up in the archives of the Indies. Herrera had these reports before him when he was writing his history, but it is certain that he did not make use of half the

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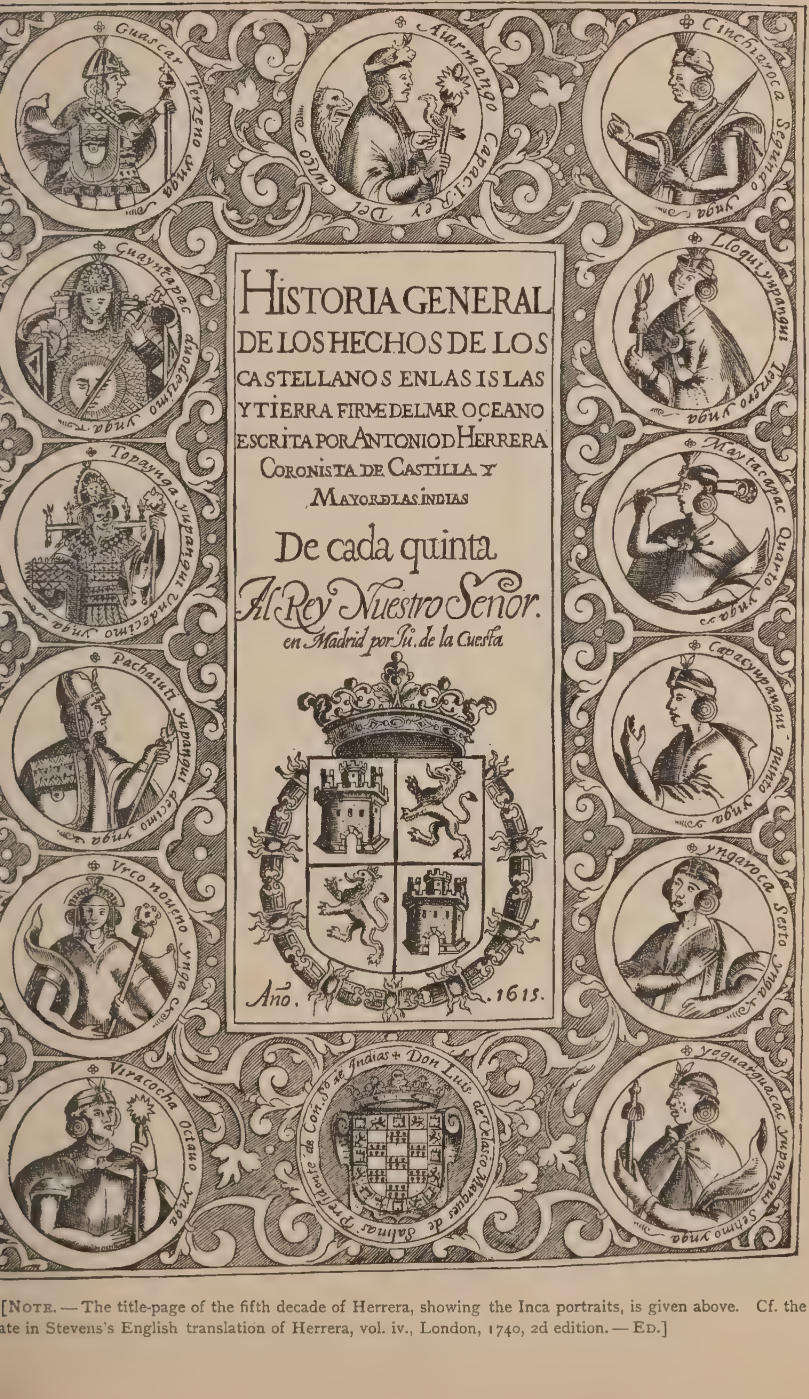
[1] In a learned pamphlet on the word *Uirakocha*, — "*Lexicologia Keshua por Leonardo Villar*" (pp. 16 double columns. Lima, 1887).

[2] [The common expression of distrust is such as is shown by Hutchinson in his *Two Years in Peru*, who finds little to commend amid a constant glorification of the Incas to the prejudice of the older peoples; and by Marcoy in his *Travels in South America*, who speaks of his "simple and audacious gasconades" (Eng. trans. i. p. 186). — ED.]

[3] [Cf. the bibliography of the book in Vol. II. pp. 569, 570, 575. — ED.]

[4] By Clements R. Markham, in 1872.



HISTORIA GENERAL
DE LOS HECHOS DE LOS
CASTELLANOS EN LAS ISLAS
Y TIERRA FIRME DEL MAR OCEANO
ESCRITA POR ANTONIO D HERRERA
CORONISTA DE CASTILLA Y
MAYOR D LAS INDIAS

De cada quinta

Al Rey Nuestro Senor.
en Madrid por Iu. de la Cueſta

Año. 1615.

Guascar Terzeno ynga
Aiarmango Capac. Rey Del Cuzco
Cinchiroca Segundo ynga
Guaynacapac duodecimo ynga
Lloqui yupangui Terzero ynga
Topaynga yupangui undecimo ynga
Maytacapac Quarto ynga
Pachacuti yupangui decimo ynga
Capacyupangui quinto ynga
Vrco noueno ynga
yngaroca Sesto ynga
Viracocha Octauo ynga
Indias Don Luis de Velasco Marques de Salinas Presidente de Con. So de
yoguarguacac yupangui Sethimo ynga

[Note. — The title-page of the fifth decade of Herrera, showing the Inca portraits, is given above. Cf. the ate in Stevens's English translation of Herrera, vol. iv., London, 1740, 2d edition. — Ed.]

material they contain.[1] Another very curious and valuable source of information consists of the reports on the origin of Inca sovereignty, which were prepared by order of the Viceroy Don Francisco de Toledo, and forwarded to the council of the Indies. They consist of twenty documents, forming a large volume, and preceded by an introductory letter. The viceroy's object was to establish the fact that the Incas had originally been usurpers, in forcibly acquiring authority over the different provinces of the empire, and dispossessing the native chiefs. His inference was, that, as usurpers, they were rightfully dethroned by the Spaniards. He failed to see that such an argument was equally fatal to a Spanish claim, based on anything but the sword. Nevertheless, the traditions collected with this object, not only from the Incas at Cuzco, but also from the chiefs of several provinces, are very important and interesting.[2]

The Viceroy Toledo also sent home four cloths on which the pedigree of the Incas was represented. The figures of the successive sovereigns were depicted, with medallions of their wives, and their respective lineages. The events of each reign were recorded on the borders, the traditions of Paccari-tampu, and of the creation by Uiracocha, occupying the first cloth. It is probable that the Inca portraits given by Herrera were copied from those on the cloths sent home by the viceroy. The head-dresses in Herrera are very like that of the high-priest in the *Relacion* of the anonymous Jesuit. A map seems to have accompanied the pedigree, which was drawn under the superintendence of the distinguished sailor and cosmographer, Don Pedro Sarmiento de Gamboa.[3]

Much curious information respecting the laws and customs of the Incas and the beliefs of the people is to be found in ordinances and decree of the Spanish authorities, both civil and ecclesiastical. These ordinances are contained in th *Ordenanzas del Peru*, of the Licentiate Toma de Ballesteros, in the *Politica Indiana* of Jua de Solorzano (Madrid, 1649),[4] in the *Concilium Limense* of Acosta, and in the *Constitucione Synodales* of Dr. Lobo Guerrero, Archbishop o Lima, printed in that city in 1614, and again i 1754.

The kingdom of Quito received attention from several early writers, but most of their manuscripts are lost to us. Quito was fortunate, however, in finding a later historian to devote himsel to the work of chronicling the story of his nativ land. Juan de Velasco was a native of Riobamba. He resided for forty years in the kingdom of Quito as a Jesuit priest, he taught an preached in the native language of the people and he diligently studied all the works on th subject that were accessible to him. He spen six years in travelling over the country, twent years in collecting books and manuscripts; an when the Jesuits were banished he took refug in Italy, where he wrote his *Historia del Rein de Quito*. Velasco used several authorities whic are now lost. One of these was the *Conquista de la Provincia del Quito*, by Fray Marco de Niza, a companion of Pizarro. Another wa the *Historia de las guerras civiles del Inca Atahualpa*, by Jacinto Collahuaso. He also refer to the *Antigüedades del Peru* by Bravo de Saravia. As a native of Quito, Velasco is a stron partisan of Atahualpa; and he is the only historian who gives an account of the traditions respecting the early kings of Quito. The work was completed in 1789, brought from Europe and printed at Quito in 1844, and M. Ternaux Compans brought out a French edition in 1840.

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[1] [Cf. bibliog. of Herrera in Vol. II. pp. 67, 68. — Ed.]

[2] *Informaciones acerca del Señorio y Gobierno de los Ingas hechas, por mandado de Don Francisco d Toledo Virey del Peru* (1570 72). Edited by Don Márcos Jiménez de la Espada, in the *Coleccion de libro Españoles raros ó curiosos*, Tomo xvi. (Madrid, 1882).

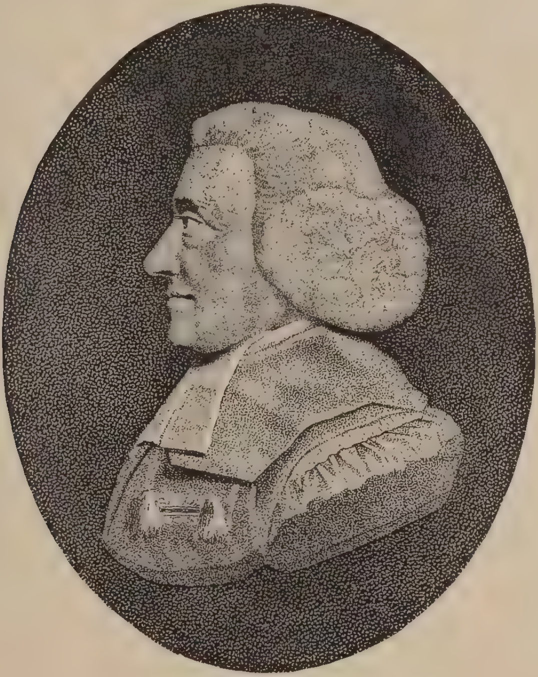
[3] We first hear of Sarmiento in a memorial dated at Cuzco on March 4, 1572, in which he says that he wa the author of a history of the Incas, now lost. We further gather that, owing to having found out from th records of the Incas that Tupac Inca Yupanqui discovered two islands in the South Sea, called *Ahuachump* and *Ninachumpi*, Sarmiento sailed on an expedition to discover them at some time previous to 1564. Balboa also mentions the tradition of the discovery of these islands by Tupac Yupanqui. Sarmiento seems to hav discovered islands which he believed to be those of the Inca, and in 1567 he volunteered to command th expedition dispatched by Lope de Castro, then governor of Peru, to discover the Terra Australis. But Castr gave the command to his own relation, Mandana. We learn, however, from the memorial of Sarmiento, tha he accompanied the expedition, and that the first land was discovered through shaping a course in accordanc with his advice. Sarmiento submitted a full report of this first voyage of Mandana, which is now lost, to th Viceroy Toledo. In 1579, Sarmiento was sent to explore the Straits of Magellan. In 1586, on his way t Spain, he was captured by an English ship belonging to Raleigh, and was entertained hospitably by Sir Walte at Durham House until his ransom was collected. From the Spanish captive his host obtained much information respecting Peru and its Incas. He could have no higher authority. One of the journals of the survey o Magellan Straits by Sarmiento was published at Madrid in 1768: *Viage al estrecho de Magellanes: por e Capitan Pedro Sarmiento de Gamboa, en los años 1579 y 1580.* See Vol. II. p. 616.

[4] [Cf. Vol. II. p. 571.]

[5] *Historia del Reino de Quito, en la America Meridional, escrita por el Presbitero Don Juan de Velasco,*

Recent authors have written introductory es-
ys on Peruvian civilization to precede the story
the Spanish conquest, have described the
ins in various parts of the country after per-
nal inspection, or have devoted their labors to
iting the early authorities, or to bringing pre-
ously unknown manuscripts to light, and thus
dening and strengthening the foundation on
ich future histories may be raised.

Robertson's excellent view of the story of the
cas in his *History of America*[1] was for many
ars the sole source of information on the sub-
ct for the general English public; but since 1848 it has been superseded by Prescott's charming narrative contained in the opening book of his *Conquest of Peru*.[2] The knowledge of the present generation on the subject of the Incas is derived almost entirely from Prescott, and, so far as it goes, there can be no better authority. But much has come to light since his time. Prescott's narrative, occupying 159 pages, is founded on the works of Garcilasso de la Vega, who is the authority most frequently cited by him, Cieza de Leon, Ondegardo, and Acosta.[3] Helps, in the chapter of his *Spanish Conquest* on Inca civilization, which covers forty-five pages,



WILLIAM ROBERTSON.*

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ativo de Mismo Reino, año de 1789. A Spanish edition, *Quito, Imprenta del Gobierno*, 1844, 3 Tomos,
as printed from the manuscript, *Histoire du Royaume de Quito, por Don Juan de Velasco* (*inédite*,) vol.
. *Voyages, &c., par H. Ternaux Compans* (Paris, 1840). This version, however, covers only a part of
e work, of which the second volume only relates to the ancient history. [Cf. Vol. II. p. 576. — Ed]

[1] [Cf. Vol. II. p. 578. — Ed.]

[2] [Cf. Vol. II. p. 577; Sabin's *Dictionary*, xv. p. 439. The opinions of Prescott can be got at through
oole's Index, p. 993. H. H. Bancroft, *Chronicles*, 25, gives a characteristic estimate of Prescott's archæo-
gical labors. Prescott's catalogue of his own library, with his annotations, is in the Boston Public Library.
). 6334.27. — Ed.]

[3] Prescott quotes these four authorities 249 times, and all other early writers known to him (Herrera, Zarate,
etanzos, Balboa, Montesinos, Pedro Pizarro, Fernandez, Gomara, Levinus Apollonius, Velasco, and the MS
Declaracion de la Audiencia") 82 times.

* [After a print in the *European Mag.* (1802), vol. xli. — Ed.]

only cited two early authorities not used by Prescott,[1] and his sketch is much more superficial than that of his predecessor.[2]

The publication of the *Antigüedades Peruanas* by Don Mariano Eduardo de Rivero (the director of the National Museum at Lima) and Juan Diego de Tschudi at Vienna, in 1851, marked an important turning-point in the progress of investigation. One of the authors was himself a Peruvian, and from that time some of the best educated natives of the country have given their attention to its early history. The *Antigüedades* for the first time gives due prominence to an estimate of the language and literature of the Incas, and to descriptions of ruins throughout Peru. The work is accompanied by a large atlas of engravings; but it contains grave inaccuracies, and the map of Pachacamac is a serious blemish to the work.[3] The *Antigüedades* were followed by the *Annals of Cuzco*,[4] and in 1860 the *Ancient History of Peru*, by Don Sebastian Lorente, was published at Lima.[5] In a series of essays in the *Revista Peruana*,[6] Lorente gave the results of many years of further study of the subject, which appear to have been the concluding labors of a useful life. When he died, in November, 1884, Sebastian Lorente had been engaged for upwards of forty years in the instruction of the Peruvian youth at Lima and in other useful labors. A curious genealogical work on the Incarial family was published at Paris in 1850, by Dr. Justo Sahuaraura Inca, a canon of the cathedral of Cuzco, but it is of no historical value.[7]

Several scholars, both in Europe and America have published the results of their studies relating to the problems of Inca history. Ernes Desjardins has written on the state of Peru before the Spanish conquest,[8] J. G. Müller on the religious beliefs of the people,[9] and Waitz on Peruvian anthropology.[10] The writings of Dr Brinton, of Philadelphia, also contain valuable reflections and useful information respecting the mythology and native literature of Peru.[11] Mr Bollaert had been interested in Peruvian researches during the greater part of his lifetime (b. 1807; d. 1876), and had visited several provinces of Peru, especially Tarapaca. He accumulated many notes. His work, at first sight appears to be merely a confused mass of jottings and certainly there is an absence of method and arrangement; but closer examination will lead to the discovery of many facts which are not to be met with elsewhere.[12]

A critical study of early authorities and a knowledge of the Quichua language are two essential qualifications for a writer on Inca civilization. But it is almost equally important that he should have access to intelligent and accurate descriptions of the remains of ancient edifices and public works throughout Peru. For this he is dependent on travellers, and it must be confessed that no descriptions at all meeting the requirements were in existence before the opening of the present century. Humboldt was the first traveller in South America who pursued his antiquarian researches on a scientific basis. His works are models for all future travellers. It

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[1] Calancha and a MS. letter of Valverde. He also refers several times to the *Antigüedades Peruanas* of Tschudi and Rivero.

[2] *Spanish Conquest in America*, vol. iii. book xiii. chap. 3, pp. 468 to 513. [Cf. Vol. II. p. 578. — Ed.]

[3] It was translated into English as *Peruvian Antiquities*, by Dr. Francis L. Hawkes, of New York, in 1853 [The English translation retained the woodcuts, but omitted the atlas. Cf. Field, *Ind. Bibliog.*, no. 1306; Sabin, xvii. p. 319. There is a French edition, *Antiquités Péruviennes* (Paris, 1859). Dr. Tschudi later published *Reisen durch Süd Amerika*, in five vols. (Leipzig, 1866–69), which was translated into English as *Travels in Peru, 1838–1842*, and published in New York and London. — Ed.]

[4] *Los Anales del Cuzco, por Dr. Mesa* (Cuzco, 2 vols.).

[5] *Historia Antigua del Peru, por Sebastian Lorente* (Lima, 1860).

[6] *Historia de la civilizacion Peruana, Revista de Lima* (Lima, 1880).

[7] *Recuerdos de la Monarquia Peruana, ó Bosquejo de la historia de los Incas, por Dr. Justo Sahuaraura Inca, Canonigo en la Catedral de Cuzco* (Paris, 1850).

[8] *Le Pérou avant la conquête espagnole, d'après les principaux historiens originaux et quelques documents inédits sur les antiquités de ce pays* (Paris, 1858).

[9] *Geschichte der Amerikanischen Urreligionen, von J. G. Müller* (Basel, 1867).

[10] *Anthropologie der Naturvölker, von Dr. Theodor Waitz* (4 vols.) Leipzig, 1864.

[11] *Myths of the New World, a treatise on the symbolism and mythology of the Red Race of America, by Daniel G. Brinton, M. D.* (New York, 1868). *Aboriginal American authors and their productions, especially those in the native languages, by Daniel G. Brinton, M. D.* (Philadelphia, 1883). [Brinton's writings, however, in the main illustrate the antiquities north of Panama.]

[12] *Antiquarian, ethnological and other researches in New Granada, Equador, Peru, and Chile; with observations on the Pre-Incarial, Incarial, and other monuments of Peruvian nations, by William Bollaert, F. R. G. S.* (London, 1860). [Bollaert's minor and periodical contributions, mainly embodied in his final work, are numerous: *Contributions to an introduction to the Anthropology of the New World. Ancient Peruvian graphic Records* (tr. in *Archives de la Soc. Amér. de France*, n. s., i.). *Observations on the history of the Incas* (in the *Transactions Ethnological Soc.*, 1854). — Ed.]

to Humboldt,[1] and his predecessors the Ul-
as,[2] that we owe graphic descriptions of Inca
ins in the kingdom of Quito and in northern
eru as far as Caxamarca. French travellers
ve contributed three works of importance to
e same department of research. M. Alcide
'Orbigny examined and described the ruins of
iahuanacu with great care.[3] M. François de
astelnau was the leader of a scientific expedi-
on sent out by the French government, and his
ork contains descriptions of ruins illustrated
plates.[4] The work of M. Wiener is more
mplete, and is intended to be exhaustive. He
as also employed by the French government
an archæological and ethnographic mission
Peru, from 1875 to 1877, and he has per-
rmed his task with diligence and ability, while
cost seems to have been spared in the pro-
ıction of his work.[5] The maps and illustra-
ons are numerous and well executed, and M.
/iener visited nearly every part of Peru where
rchæological remains are to be met with. There
only one fault to be found with the praiseworthy and elaborate works of D'Orbigny and Wiener. The authors are too apt to adopt theories on insufficient grounds, and to confuse their otherwise admirable descriptions with imaginative speculations. An example of this kind has been pointed out by the Peruvian scholar Dr. Villar, with reference to M. Wiener's erroneous ideas respecting *Culte de l'eau ou de la pluie, et le dieu Quonn*.[6] M. Wiener is the only modern traveller who has visited and described the interesting ruins of Vilcas-huaman.

The present writer has published two books recording his travels in Peru. In the first he described the fortress of Hervay, the ancient irrigation channels at Nasca on the Peruvian coast, and the ruins at and around Cuzco, including Ollantay-tampu.[7] In the second there are descriptions of the *chulpas* at Sillustani in the Collao, and of the Inca roof over the Sunturhuasi at Azangaro.[8]

The work of E. G. Squier is, on the whole, the most valuable result of antiquarian researches in Peru that has ever been presented to the public.[1] Mr. Squier had special qualifications for the task. He had already been engaged on similar work in Nicaragua, and he was well versed in the history of his subject. He visited nearly all the ruins of importance in the country, constructed plans, and took numerous photographs. Avoiding theoretical disquisitions, he gives most accurate descriptions of the architectural remains, which are invaluable to the student. His style is agreeable and interesting while it inspires confidence in the reader; and his admirable book is in all respects thoroughly workmanlike.[2]

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[1] *Vues des Cordillères, ou Monumens des Peuples indigènes de l'Amérique* (Paris, 1810; in 8vo, 1816),
lled in the English translation, *Researches concerning the institutions and monuments of the ancient inhab-
ants of America, with descriptions and views of some of the most striking scenes in the Cordilleras. Transl.
to English by Helen Maria Williams* (London, 1814). *Voyage aux Régions équinoxiales du Nouveau
ontinent fait en 1799–1804, avec deux Atlas*, 3 vols. 4to (Paris, 1814–25; and 8vo, 13 vols., 1816–31), called
the English translation, *Personal narrative of travels to the equinoctial regions of America, 1799–1804, by
. von Humboldt [and A. Bonpland]: translated and edited by Thomasina Ross* (Lond., 1852); and in ear-
er versions by H. M. Williams (London, 1818–1829). [Humboldt's later summarized expressions are found
his *Ansichten der Natur* (Stuttgart, 1849; English tr., *Aspects of Nature*, by Mrs. Sabine, London and
hilad., 1849; and *Views of Nature*, by E. C. Otté, London, 1850). Current views of Humboldt's American
udies can be tracked through *Poole's Index*, p. 613. — Ed.]

[2] Antonio Ulloa's *Mémoires philosophiques, historiques, physiques, concernant le découverte de l'Amé-
que* (Paris, 1787). *Voyage historique de l'Amérique Méridionale, fait par ordre du Roy d'Espagne;
vrage qui contient une histoire des Yncas du Pérou, et des observations astronomiques et physiques, faites
ur déterminer la figure et la grandeur de la terre* (Amsterdam, 1732). Or in the English translation,
oyage to South America by Don Jorge Juan and Don Antonio de Ulloa, 2 vols. 8vo (London, 1758, 1772;
th ed. 1807). [Another of the savans in this scientific expedition was Charles M. La Condamine, and we
ve his observations in his *Journal du Voyage fait à l'Equateur* (1751), and in a paper on the Peruvian
onuments in the *Mémoires* of the Berlin Academy (1746). Other early observers deserving brief mention
e Pedro de Madriga, whose account is appended to Admiral Jacques d'Heremite's *Journael van de Nas-
usche Vloot* (Amsterdam, 1652), and AmedéeFrançois Frezier's *Voyage to the South Sea* (London, 1717)
-Ed.]

[3] *L'Homme Américain considéré sous ses Rapports Physiologiques et Moraux* (Paris, 1839). [He gives
large ethnological map of South America. His book is separately printed from *Voyages dans l'Amérique
eridionale* (9 vols.) — Ed.]

[4] *Expédition dans les parties centrales de l'Amérique de Sud, exécutée par ordre du Gouvernement Fran-
is pendant les annees 1843 à 1847. Troisième partie, Antiquités des Incas* (4to, Paris, 1854).

[5] *Pérou et Bolivie. Récit de voyage suivi d'études archéologiques et ethnographiques et de notes sur l'écri-
re et les langues des populations Indiennes. Ouvrage contenant plus de 1100 gravures, 27 cartes et 18
ans, par Charles Wiener* (Paris, 1880). [Wiener earlier published two monographs: *Notice sur le com-
unisme des Incas* (Paris, 1874); *Essai sur les institutions politiques, religieuses, économiques et sociales de
Empire des Incas* (Paris, 1874). — Ed.]

[6] *Uiracocha, por Leonardo Villar* (Lima, 1887).

[7] *Cuzco and Lima* (London, 1856).

[8] *Travels in Peru and India while superintending the collection of chinchona plants and seeds in South
merica, and their introduction into India* (London, 1862). [Cf. Field's *Indian Biblioq.* for notes on Mr.
arkham's book. He epitomizes the accounts of Peruvian antiquities in his *Peru* (London, 1880), of the
Foreign Countries Series." Cf. Vol. II. p. 578. — Ed.]

Tiahuanacu is minutely described by D'Or-

CLEMENTS R. MARKHAM.*

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[1] *Peru. Incidents of travel and exploration in the land of the Incas* (N. Y. 1877; London, 1877). [Squier was sent to Peru on a diplomatic mission by the United States government in 1863, and this service rendered he gave two years to exploring the antiquities of the country. His *Peru* embodies various separate studies which he had previously contributed to the *Journal of the American Geographical Society* (vol. iii. 1870–71) the *American Naturalist* (vol. iv. 1870); *Harper's Monthly* (vols. vii., xxxvi., xxxvii.). He contributed "Quelques remarques sur la géographie et les monuments du Pérou" to the *Bulletin de la Société de géographie de Paris*, Jan., 1868. A list of Squier's publications is appended to the Sale *Catalogue* of his Library (N. Y., 1876), which contains a list of his MSS., most of which, it is believed, passed into the collection of H H. Bancroft. Mr. Squier's closing years were obscured by infirmity; he died in 1888. — Ed.]

[2] [Among the recent travellers, mention may be made of a few of various interests: Edmund Temple's *Travels in Peru* (Lond., 1830); Thomas Sutcliffe's *Sixteen Years in Chili and Peru* (Lond., 1841); S. S Hill's *Travels in Peru and Mexico* (Lond., 1860); Thos. J. Hutchinson's *Two Years in Peru* (with papers on prehistoric anthropology in the *Anthropological Journal*, iv. 438, and "Some Fallacies about the Incas," in the *Proc. Lit. and Phil. Soc. of Liverpool*, 1873–74, p. 121); Marcoy's *Voyage*, first in the *Tour du Monde* 1863–64, and then separately in French, and again in English; E. Pertuiset's *Le Trésor des Incas* (Paris 1877); and Comte d'Ursel's *Sud-Amérique*, 2d ed. (Paris, 1879). F. Hassaurek, in his *Four Years among Spanish Americans* (N. Y., 1867), epitomizes in his ch. xvi. the history of Quito. — Ed.]

* [After a photograph kindly furnished by himself at the editor's request. — Ed.]

ny, Wiener, and Squier, and the famous ruins e also been the objects of special attention m other investigators. Mr. Helsby of Liverol took careful photographs of the monolithic orway in 1857, which were engraved and pubed, with a descriptive article by Mr. Bollaert.[1] n Modesto Basadre has also written an ac- nt of the ruins, with measurements.[2] But most complete monograph on Tiahuanacu by Mr. Inwards, who surveyed the ground, otographed all the ruins, made enlarged draws of the sculptures on the monolithic door- y, and even attempted an ideal restoration of palace. In the letter-press, Mr. Inwards otes from the only authorities who give any count of Tiahuanacu, and on this particular nt his monograph entitles him to be considd as the highest modern authority.[3]

Another special investigation of equal interest, l even greater completeness, is represented the superb work on the burial-ground of An- , being the results of excavations made on spot by Wilhelm Reiss and Alphonso Stü- . The researches of these painstaking and ented antiquaries have thrown a flood of light the social habits and daily life of the civilized ople of the Peruvian coast.[4]

The great work of Don Antonio Raimondi on ru is still incomplete. The learned Italian s already devoted thirty-eight years to the dy of the natural history of his adopted country, and the results of his prolonged scientific labors are now gradually being given to the public. The plan of this exhaustive monograph is a division into six parts, devoted to the geography, geology, mineralogy, botany, zoölogy, and ethnology of Peru. The geographical division will contain a description of the principal ancient monuments and their ruins, while the ethnology will include a treatise on the ancient races, their origin and civilization. But as yet only three volumes have been published. The first is entitled *Parte Preliminar*, describing the plan of the work and the extent of the author's travels throughout the country. The second and third volumes comprise a history of the progress of geographical discovery in Peru since the conquest by Pizarro. The completion of this great work, undertaken under the auspices of the government of Peru, has been long delayed.[5]

The labors of explorers are supplemented by the editorial work of scholars, who bring to light the precious relics of early authorities, hitherto buried in scarcely accessible old volumes or in manuscript. First in the ranks of these laborers in the cause of knowledge, as regards ancient Peruvian history, stands the name of M. Ternaux Compans. He has furnished to the student carefully edited French editions of the narrative of Xeres, of the history of Peru by Balboa, of the *Mémoires Historiques* of Montesinos, and of the history of Quito by Velasco.[6]

Intellectual Observer, May, 1863 (London).

Riquezas Peruanas (Lima, 1884).

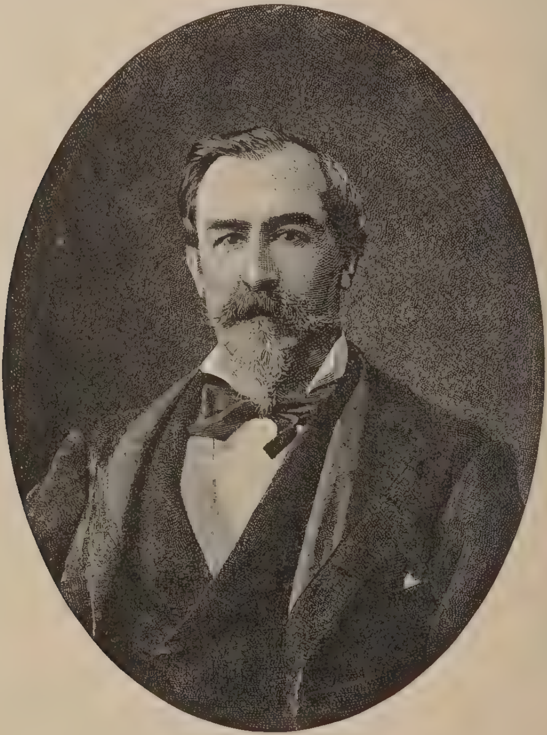
The temple of the Andes, by Richards Inwards (London, 1884). [Mr. Markham has also had occasion to ak of these ruins in annotating his edition of Cieza de Leon, p. 374. There is a privately printed book by Angrand, *Antiquités Américaines: lettres sur les antiquités de Tiaguanaco, et l'origine présumable la plus ancienne civilisation du Haut-Pérou* (Paris, 1866). — Ed.]

This superb work was issued at Berlin and London with German and English texts. The English title ds, *Peruvian Antiquities: the Necropolis of Ancon in Peru. A contribution to our knowledge of the cul- re and industries of the empire of the Incas. Being the results of excavations made on the spot.* Trans- ed by A. H. Keane. With the aid of the general administration of the royal museums of Berlin (Berlin, o–87); in three folio volumes, with 119 colored and plain plates. The divisions are: 1. The Necropolis and graves. 2. Garments and textiles. 3. Ornaments, utensils, earthenware; evolution of ornamentation, with atises by L. Wittmack on the plants found in the graves; R. Virchow on the human remains, and A. Neh- g on the animals. [A few of the plates are reproduced in black and white in Ruge's *Geschichte des Zeit- ers der Entdeckungen.* The authors represent that the graveyard of Ancon, an obscure place lying near the st, north of Lima, was probably the burial-place of a poor people; but its obscurity has saved it to us while portant places have been ransacked and destroyed. The reader will be struck with the richness of the woven terials, which are so strikingly figured in the plates. On this point Stübel published in Dresden in 1888, as art of the *Festschrift* of the twenty-fifth anniversary of the "Verein für Erdkunde," a paper *Ueber altperu- ische Gewebemuster und ihnen analoge Ornamente der altklassischen Kunst* (Dresden, 1888). Some of plates in the larger work impress one with the great variety of ornamenting skill. The collection formed by n H. Blake from an ancient cemetery on the bay of Chacota, now in the Peabody Museum at Cambridge, ss., is described in the *Reports* of that institution, xi. 195, 277. Reference may also be made to B. M. ight's *Description of the collection of gold ornaments from the "huacas," or graves of some aboriginal ces of the northwestern provinces of South America, belonging to Lady Brassey* (London, 1885). — Ed.]

Antonio Raimondi. *El Peru. Tomo I. Parte Preliminar, 4to, pp. 444* (Lima, 1874). *Tomo II. His- ia de la Geografia del Peru, 4to, pp. 475* (Lima, 1876). *Tomo III. Historia de la Geografia del Peru, , pp. 614* (Lima, 1880).

Voyages, Relations et Mémoires Originaux pour servir à l'Histoire de la Découverte de l'Amérique, 20 s. in 10, 8vo (Paris, 1837–41). See Vol. II., introd. p. vi.

The present writer has translated into English and edited the works of Cieza de Leon, Garcilasso de la Vega, Molina, Salcamayhua, Avila, Xeres, Andagoya, and one of the reports of Ondegardo, and has edited the old translation of Acosta.



MÁRCOS JIMÉNEZ DE LA ESPADA.*

Dr. M. Gonzalez de la Rosa, an accomplished Peruvian scholar, brought to light and edited, in 1879, the curious *Historia de Lima* of Father Bernabé Cobo. It was published in successive numbers of the *Revista Peruana*, at Lima.

But in this department students are most indebted to the learned Spanish editor, Don Márcos Jiménez de la Espada; for he has placed within our reach the works of important authorities, which were previously not only inaccessible, but unknown. He has edited the second part of Cieza de Leon, the anonymous Jesuit, Montesinos, Santillana, the reports to the Viceroy Toledo, the *Suma y Narracion* of Betanzos, and the *War of Quito*, by Cieza de Leon. Moreover, there is every reason to hope that his career of literary usefulness is by no mean ended.

Although so much has been accomplished i the field of Peruvian research, yet much remain to be done, both by explorers and in the stud The Quichua chapters of the work of Avil containing curious myths and legends, remai untranslated and in manuscript. A satisfactor text of the Ollantay drama, after collation of a accessible manuscripts, has not yet been s cured. Numerous precious manuscripts hav yet to be unearthed in Spain. Songs of th times of the Incas exist in Peru, which shoul be collected and edited. There are scientifi excavations to be undertaken, and secluded dis tricts to be explored. The Yunca grammar o Carrera requires expert comparative study, an comparison with the Eten dialect. Remnants o archaic languages, such as the Puquina of th Urus, must be investigated. When all this, an much more, has been added to existing mean of knowledge, the labors of pioneers will ap proach completion. Then the time will have arrived for the preparation of a history of ancient Peruvian civilization which will be worthy of the subject.[1]

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* [After a photograph, kindly furnished by himself, at the editor's request. — Ed.]

Clements R Markham

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[1] [Among less important or more general later writers on this ancient civilization may be mentioned: Charles Labarthe's *La Civilisation péruvienne avant l'arrivée des Espagnols* (*Archives de la Soc. Amér. de France*, n. s., i.), and his paper from the *Annuaire Ethnographique*, on the "Documents inédits sur l'empire des Incas" (Paris, 1861); Rudolf Falb's *Das Land der Inca in seiner Bedeutung für die Urgeschichte der Sprache und Schrift* (Leipzig, 1883); Lieut. G. M. Gilliss, in Schoolcraft's *Ind. Tribes*, v. 657; Dr. Macedo's comparison of the Inca and Aztec civilizations in the *Proc. of the Numism. and Antiq. Soc.* (Philad. 1883); Vicomte Th. de Bussière's *Le Pérou* (Paris, 1863); beside chapters in such comprehensive works as those of Nadaillac, Ruge, Baldwin, Wilson (*Prehistoric Man*), and the papers of Castaing and others in the *Archives de la Soc. Amér. de France*, and an occasional paper in the *Journals* of the American and other geographical and ethnological societies. Current English comment is reached through *Poole's Index*, pp. 627, 992. — Ed.]

NOTES.

I. Ancient People of the Peruvian Coast. — There was a civilized people on the coast of Peru, but not occupying the whole coast, which was distinctly different, both as regards race and language, from the Incas and their cognate tribes. This coast nation was called *Chimu*, and their language *Mochica*.[1]

The numerous valleys on the Peruvian coast, separated by sandy deserts of varying width, required only careful irrigation to render them capable of sustaining a large population. The aboriginal inhabitants were probably a diminutive race of fishermen. Driven southwards by invaders, they eventually sought refuge in Arica and Tarapaca. D'Orbigny described their descendants as a gentle, hospitable race of fishermen, never exceeding five feet in height, with flat noses, fishing in boats of inflated sealskins, and sleeping in huts of sealskin on heaps of dried seaweed. They are called Changos. Bollaert mentions that they buried their dead lengthways. Bodies found in this unusual posture near Cañete form a slight link connecting the Changos to the south with the early aboriginal race of the more northern valleys.

The *Chimu* people drove out the aborigines and occupied the valleys of the coast from Payta nearly to Lima, forming distinct communities, each under a chief more or less independent. The *Chimu* himself ruled over the five valleys of Parmunca, Hualli, Huanapu, Santa, and Chimu, where the city of Truxillo now stands. The total difference of their language from Quichua makes it clear that the Chimus did not come from the Andes or from the Quito country. The only other alternative is that they arrived from the sea. Balboa, indeed, gives a detailed account of the statements made by the coast Indians of Lambayeque, at the time of the conquest. They declared that a great fleet arrived on the coast some generations earlier, commanded by a chief named Noymlap, who had with him a green-stone idol, and that he founded a dynasty of chiefs.

The *Chimu* and his subjects, let their origin be what it may, had certainly made considerable advances in civilization. The vast palaces of the Chimu near the seashore, with a surrounding city, and great mounds or artificial hills, are astonishing even in their decay. The principal hall of the palace was 100 feet long by 52. The walls are covered with an intricate and very effective series of arabesques on stucco, worked in relief. A neighboring hall, with walls stuccoed in color, is entered by passages and skirted by openings leading to small rooms seven feet square, which may have been used as dormitories. A long corridor leads from the back of the arabesque hall to some recesses where gold and silver vessels have been found. At a short distance from this palace there is a sepulchral mound where many relics have been discovered. The bodies were wrapped in cloths woven in ornamental figures and patterns of different colors. On some of the cloths plates of silver were sewn, and they were edged with borders of feathers, the silver plates being occasionally cut in the shapes of fishes and birds. Among the ruins of the city there are great rectangular areas enclosed by massive walls, containing buildings, courts, streets, and reservoirs for water.[2] The largest is about a mile south of the palace, and is 550 yards long by 400. The outer wall is about 30 feet high and 10 feet thick at the base, with sides inclining towards each other. Some of the interior walls are highly ornamented in stuccoed patterns; and in one part there is an edifice containing 45 chambers or cells, which is supposed to have been a prison. The enclosure also contained a reservoir 450 feet long by 195, and 60 feet deep.

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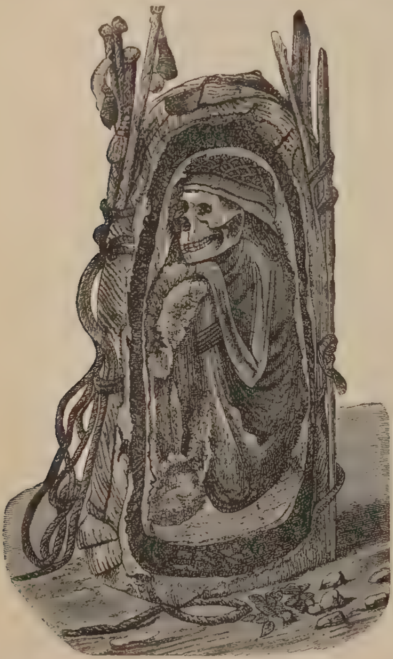
[1] [Humboldt (*Views of Nature*, 235) points out that the name Chimborazo is probably a relic of this earlier tongue. — Ed.]

[2] [Wiener, *Pérou et Bolivie*, p. 98, gives a plan of the neighborhood of Truxillo, showing the position "du Gran Chimu," and an enlarged plan of the ruins. — Ed.]

The dry climate favored the adornment of outer walls by color, and those of the Chimu palaces were covered with very tasteful sculptured patterns. Figures of colored birds and animals are said to have been painted on the walls of temples and palaces. Silver and gold ornaments and utensils, mantles richly embroidered, robes of feathers, cotton cloths of fine texture, and vases of an infinite variety of curious designs, are found in the tombs.

Cieza de Leon gives us a momentary glimpse at the life of the Chimu chiefs. Each ruler of a valley, he tells us, had a great house with adobe pillars, and doorways hung with matting, built on extensive terraces. He adds that the chiefs dressed in cotton shirts and long mantles, and were fond of drinking-bouts, dancing and singing. The walls of their houses were painted with bright colored patterns and figures. Such places, rising out of the groves of fruit-trees, with the Andes bounding the view in one direction and the ocean in the other, must have been suitable abodes for joy and feasting. Around them were the fertile valleys, peopled by industrious cultivators, and carefully irrigated. Their irrigation works were indeed stupendous. "In the valley of Nepeña the reservoir is three fourths of a mile long by more than half a mile broad, and consists of a massive dam of stone 80 feet thick at the base, carried across a gorge between two rocky hills. It was supplied by two canals at different elevations; one starting fourteen miles up the valley, and the other from springs five miles distant."[1]



SECTION OF A MUMMY-CASE FROM ANCON.*

The custom prevalent among the Chimus of depositing with their dead all objects of daily use, as well as ornaments and garments worn by them during life, has enabled us to gain a further insight into the social history of this interesting people. The researches of Reuss and Stübel at the necropolis of Ancon, near Lima, have been most important. Numerous garments, interwoven with work of a decorative character, cloths of many colors and complicated patterns, implements used in spinning and sewing, work-baskets of plaited grass, balls of thread, finger-rings, wooden and clay toys, are found with the mummies. The spindles are richly carved and painted, and attached to them are terra cotta cylinders aglow with ornamental colorings which were used as wheels. Fine earthenware vases of varied patterns, and wooden or clay dishes, also occur.

Turning to the language of the coast people, we find that no Mochica dictionary was ever made; but there is a grammar and a short list of words by Carrera, and the Lord's prayer in Mochica, by Bishop Oré. The grammar was composed by a priest who had settled at Truxillo, near the ruins of the Chimu palace, and who was a great-grandson of one of the first Spanish conquerors. It was published at Lima in 1644. At that time the Mochica language was spoken in the valleys of Truxillo, Chicama, Chocope, Sana, Lambayeque, Chiclayo, Huacabamba, Olmos, and Motupè. When the *Mercurio Peruano*[2] was published in 1793, this language is said to have entirely disappeared. Father Carrera tells us that the Mochica was so very difficult that he was the only Spaniard who had ever been able to learn it. The words bear no resemblance whatever to Quichua. Mochica has three different declensions, Quichua only one. Mochica has no transitive verbs, and no exclusive and inclusive plurals, which are among the chief characteristics of Quichua. The Mochica conjugations are formed in quite a different way from those in the Quichua language. The Mochica system of numerals appears to have been very complete. With the language, the people have now almost if not entirely disappeared. Possibly the people of Eten, south of Lambayeque, who still speak a peculiar language, may be descendants of the Chimus.

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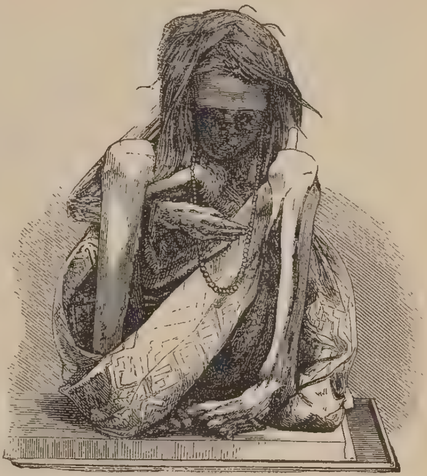
[1] Squier, 210.

[2] [There are two or three Peruvian periodicals of some importance for their archæological papers. The *Mercurio Peruano de Historia, Literatura y Noticias publicas que da a luz la Sociedad Academica de Amantes de Lima* (Lima, 1791–1795), appeared in twelve volumes. It is often defective, and the Spanish government finally interdicted it, as it was considered revolutionary in principle. It was edited at one time by the Père Cisneros. There is a set in Harvard College library.

The *Revista Peruana* (Lima) has been the channel of some important archæological contributions. Others appeared in the *Museo Erudito, o los Tiempos y las Costumbres* (Cuzco, 1837, etc.) — Ed.]

* [After a cut given by Ruge, following a plate in *The Necropolis of Ancon*. Wiener (p. 44) gives a section of one of the Ancon tombs. See a cut in Squier's *Peru*, p. 73. — Ed.]

The Chimu dominion extended probably from Tumbez, in the extreme north of the Peruvian coast, to Ancon, north of Lima. The Chimus also had a strong colony in the valley of Huarcu, now called Cañete. But the valleys of the Rimac, of Lurin, Chilca, and Mala, north of Cañete; and those of Chincha, Yca, and Nasca, south of Cañete; were not Chimu territory. The names of places in those valleys are all Quichua, as well as the names of their chiefs, as recorded by Garcilasso de la Vega and others. The inhabitants were, therefore, of Inca race, probably colonists from the Huanca nation. Their superstitions as told by Arriaga, and the curious mythological legends recorded by Avila as being believed by the people of Huarochiri and the neighboring coast, all point to an Inca origin. These Inca coast people are said to have had a famous oracle near the present site of Lima, called "Rimac," or "He who speaks." But more probably it was merely the name given to the noisy river Rimac, babbling over its stones. It is true hat there was a temple on the coast with an oracle, he fame of which had been widely spread. The dol called Pachacamac, or "The world-creator," was described by the first Spanish visitor, Miguel Estete, as being made of wood and very dirty. The town was then half in ruins, for the worship of his local deity was neglected after the conquest by the Incas. These coast people of Inca race were as ndustrious as their Chimu neighbors. In the Nasca valley there is a complete network of underground waterourses for irrigation. At Yca "they removed the sand from vast areas, until they reached the requisite moisure, then put in guano from the islands, and thus formed sunken gardens of extraordinary richness."[1] Similar methods were adopted in the valleys of Pisco and Chilca.


MUMMY FROM A HUACA AT PISCO.[*]

When the Inca Pachacutec began to annex the coast valleys, he met with slight opposition only from the people of Inca origin, who soon submitted to his rule. But the Chimus struggled hard to retain their independence. Those of the Huarcu (*Cañete*) valley made a desperate and prolonged resistance. When at ength they submitted, the Inca built a fortress and palace on a rocky eminence overlooking the sea to overwe them. The ruins now called Hervai are particularly interesting, because they are the principal and most imposing example of Inca architecture in which the building material is adobes and not stone. The onquest of the valleys to the north of Lima and of the grand Chimu himself was a still more difficult underaking, necessitating more than one hard-fought campaign. When it was completed, great numbers of the est fighting-men among the Chimus were deported to the interior as *mitimaes*. More than a century had lapsed since this conquest when the Spaniards arrived, so that there was but slight chance of the history of the Chimus being even partially preserved. Cieza de Leon and Balboa alone supply us with notices of any value.[2] The southern valleys of the coast, Arequipa, Moquegua, and Tacna, were occupied by *mitimaes* or colonists from the Collao. The Incas gave the general name of *yuncas*, or dwellers in the warm valleys, to all the eople of the coast.

Much mystery surrounds the history and origin of the *Chimu* people. That they were wholly separate and nconnected with the other races of Peru seems almost certain. That they were far advanced in civilization s clear. Difficulties surround any further prosecution of researches concerning them. They have themselves isappeared from the face of the earth. Their language has gone with them. But there are the magnificent uins of their palaces and temples. There are numerous tombs and cemeteries which have never been scienfically examined. There is a grammar and a small vocabulary of words calling for close comparative examnation. There are crania awaiting similar comparative study. There is a possibility that further information may be gleaned from inedited Spanish manuscripts. The subject is a most interesting one, and it is by no means exhausted.

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[1] Squier.

[2] I do not now believe that the idolatrous practices and legends, preserved by Arriaga and Avila, had any connection with the *Chimu* race.

[*] [After a cut in T. J. Hutchinson's *Two Years in Peru* (London, 1873), vol. i. p. 113. The Peruvian mummies are lmost invariably simply desiccated. Only the royal personages were embalmed (Markham's *Cieza de Leon*, 226). Cf. Wilson's *Prehistoric Man*, ii. 135. — Ed.]

II. THE QUICHUA LANGUAGE AND LITERATURE. — No real progress can be made in the work of elucidating the ancient history of Peru, and in unravelling the interesting but still unsolved questions relating to the origin and development of Inca civilization, without a knowledge of the native language. The subject has accordingly received the close attention of laborious students from a very early period, and the present essay would be incomplete without appending an enumeration of the Quichua grammars and vocabularies and of works relating to Inca literature.

TAPESTRY FROM THE GRAVES OF ANCON.*

Fray Domingo de San Tomas, a Dominican monk, was the first author who composed a grammar and vocabulary of the language of the Incas. He gave it the name of Quichua, probably because he had studied with members of that tribe, who were of pure Inca race, and whose territory lies to the westward of Cuzco. The name has since been generally adopted for the language of the Peruvian empire.[1]

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* [After a cut in Ruge's *Geschichte des Zeitalters der Entdeckungen*, p. 420, following the colored plate in *The Necropolis of Ancon*. Wiener reproduces in black and white many of the Ancon specimens. — ED.]

Diego de Torres Rubio was born in 1547, in a village near Toledo, became a Jesuit at the age of nineteen, and went out to Peru in 1577. He studied the native languages with great diligence, and composed grammars and vocabularies. His grammar and vocabulary of Quichua first appeared at Saville in 1603, and passed through four editions.[2] A long residence in Chuquisaca enabled him to acquire the Aymara language, and in 1616 he published a short grammar and vocabulary of Aymara. In 1627 he also published a grammar of the Guarani language. Torres Rubio was rector of the college at Potosi for a short time, but his principal labors were connected with missionary work at Chuquisaca. He died in that city at the great age of ninety-one, on the 13th of April, 1638. Juan de Figueredo, whose Chinchaysuyu vocabulary is bound up with later editions of Torres Rubio, was born at Huancavelica in 1648, of Spanish parents, and after a long and useful missionary life he died at Lima in 1724.

The most voluminous grammatical work on the language of the Incas had for its author the Jesuit Diego Gonzales Holguin. This learned missionary was the scion of a distinguished family in Estremadura, and was befriended in his youth by his relation, Don Juan de Obando, President of the Council of the Indies. After graduating at Alcalá de Henares he became a member of the Society of Jesus in 1568, and went out to Peru in 1581. He resided for several years in the Jesuit college at Juli, near the banks of Lake Titicaca, where the fathers had established a printing-press, and here he studied the Quichua language. He was entrusted with important missions to Quito and Chili, and was nominated interpreter by the Viceroy Toledo. His later years were passed in Paraguay, and when he died at the age of sixty-six, in 1618, he was rector of the college at Asuncion. His Quichua dictionary was published at Lima in 1586, and a second edition appeared in 1607,[3] the same year in which the grammar first saw the light.[4] The Quichua grammar of Holguin is the most complete and elaborate that has been written, and his dictionary is also the best in every respect.

While Holguin was studiously preparing these valuable works on the Quichua language in the college at Juli, a colleague was laboring with equal zeal and assiduity at the dialect spoken by the people of the Collao, to which the Jesuits gave the name of Aymara. Ludovico Bertonio was an Italian, a native of the marches of Ancona. Arriving in Peru in 1581, he resided at Juli for many years, studying the Aymara language, until, attacked by gout, he was sent to Lima, where he died at the age of seventy-three, in 1625. His Aymara grammar was first published at Rome in 1603,[5] but a very much improved second edition,[6] and a large dictionary of Aymara,[7] were products of the Jesuit press at Juli in 1612. Bertonio also wrote a catechism and a life of Christ in Aymara, which were printed at Juli.

A vocabulary of Quichua by Fray Juan Martinez was printed at Lima in 1604, and another in 1614. Four Quichua grammars followed during the seventeenth century. That of Alonso de Huerta was published at Lima in 1616; the grammar of the Franciscan Diego de Olmos appeared in 1633; Don Juan Roxo Mexia y Ocon, a native of Cuzco, and professor of Quichua at the University of Lima, published his grammar in 1648; and the grammar of Estevan Sancho de Melgar saw the light in 1691.[8] Leon Pinelo also mentions a Quichua grammar by Juan de Vega. The anonymous Jesuit refers to a Quichua dictionary by Melchior Fernandez, which is lost to us.

In 1644 Don Fernando de la Carrera, the Cura of Reque, near Chiclayo, published his grammar of the Yunca language, at Lima. This is the language which was once spoken in the valleys of the Peruvian coast by the civilized people whose ruler was the grand Chimu. Now the language is extinct, or spoken only by a few Indians in the coast village of Eten. The work of Carrera is therefore important, as, with the exception of a specimen of the language preserved by Bishop Oré, it is the only book in which the student can now obtain any linguistic knowledge of the lost civilization. The Yunca grammar was reprinted in numbers in the *Revista de Lima* of 1880 and following years.[1]

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[1] *Grammatica o Arte de la lengua general de los Indios de los Reynos del Peru, nuevamente compuesta por el Maestro Fray Domingo de S. Thomas de la orden de S. Domingo, Morador en los dichos reynos. Impresso en Valladolid por Francisco Fernandez de Cordova, 1560. Lexicon ó Vocabulario de la lengua general del Peru, llamada Quichua* (Valladolid, 1560). The grammar and vocabulary are usually bound up together. [The two were priced respectively by Leclerc, in 1878, at 2,500 and 600 francs. — Ed.]

The grammar and vocabulary of San Tomas were reprinted at Lima in 1586 by Antonio Ricardo. In the list given by Rivero and Von Tschudi (*Antigüedades Peruanas*, p. 99), the printer Ricardo is entered as the author of this Lima edition of San Tomas.

[2] *Grammatica y Vocabulario en la lengua general del Peru llamada Quichua por Diego de Torres Rubio S. S.* (Seville, 1603). [This original edition is of great rarity. Quaritch, in 1885, asked £20 for a defective copy. — Ed.] A second edition was printed at Lima in 1619; and a third in 1700. To this third edition a vocabulary was added of the Chinchaysuyu dialect, by Juan de Figueredo. A fourth edition was published at Lima in 1754, also containing the Chinchaysuyu vocabulary, which is spoken in the north of Peru. [For this 1754 edition see Leclerc, no. 2409. It is worth about $50. — Ed.]

[3] *Vocabulario de la Lengua general de todo el Peru llamada lengua Quichua ó del Inca.* En la ciudad de los Reyes, 1586. Second edition printed by Francisco del Canto, 1607 (2 vols. 4to). [Leclerc (no. 2401), in 1879, priced this ed. at 2,000 francs; Quaritch, a defective copy, £21.— Ed.]

[4] *Gramatica y Arte nueva de la lengua general de todo el Peru llamada lengua Qüichua o Lengua del Inca por Diego Gonzales Holguin de la Compañia de Jesus, natural de Caceres Impresso en la Ciudad de los Reyes del Peru, por Francisco del Canto, 1607.* [Leclerc, 1879, no. 2402, 500 francs. — Ed.] A second edition was published at Lima in 1842.

[5] *Arte y gramatica muy copiosa de la lengua Aymará con muchos y variados modos de hablar* (Roma, 1603).

[6] *Arte de la lengua Aymará con una selva de frases en la misma lengua y su declaracion en romance. Impresso en la casa de la Compañia de Jesus de Juli en la provincia de Chucuyto. Por Francisco del Canto, 1612.* pp. 348.

[7] *Vocabulario de la lengua Aymara, Juli 1612*, Spanish and Aymara, pp. 420, Aymara and Spanish, pp. 378. [Priced by Quaritch in 1885 at £60; by Leclerc in 1879 at 2,000 francs. — Ed.]

[8] *Arte de la lengua general del' ynga llamada Quechhua* (Lima, 1691). Leclerc, 1879. 250 francs.

There was a professorial chair for the study of Quichua in the University of San Márcos at Lima, and the language was cultivated, during the two centuries after the conquest, as well by educated natives as by many Spanish ecclesiastics. The sermons of Dr. Don Fernando de Avendaño have already been referred to.[2] Dr. Lunarejo, of Cuzco, was another famous Quichuan preacher, and the *Confesionarios* and catechisms in the language were very numerous. Bishop Louis Geronimo Oré, of Guamanga, in his ritualistic manual, gives the Lord's prayer and commandments, not only in Quichua and Aymara, but also in the Puquina language spoken by the Urus on Lake Titicaca, and in the Yunca language of the coast, which he calls Mochica.[3]

A very curious book was published at Lima in 1602, which, among other things, treats of the Quichua language and of the derivations of names of places. The author, Don Diego D'Avalos y Figueroa, appears to have been a native of La Paz. He was possessed of sprightly wit, was well read, and a close observer of nature. We gather from his *Miscelanea Austral*[4] the names of birds and animals, and of fishes in Lake Titicaca, as well as the opinions of the author on the cause of the absence of rain on the Peruvian coast, on the lacustrine system of the Collao, and on other interesting points of physical geography.[5]

In modern times the language of the Incas has received attention from students of Peruvian history. The joint authors, Dr. Von Tschudi and Don Mariano Eduardo de Rivero, in their work entitled *Antigüedades Peruanas*, published at Vienna in 1851, devote a chapter to the Quichua language. Two years afterwards Dr. Von Tschudi published a Quichua grammar and dictionary, with the text of the Inca drama of Ollantay, and other specimens of the language.[6] The present writer's contributions towards a grammar and dictionary of Quichua were published by Trübner in 1864, and a few years previously a more complete and elaborate work had seen the light at Sucre, the capital of Bolivia. This was the grammar and dictionary by Father Honorio Mossi, of Potosi, a large volume containing thorough and excellent work.[7] Lastly a Quichua grammar by José Dionisio Anchorena was published at Lima in 1874.[8]

The curious publication of Don José Fernandez Nodal in 1874 is not so much a grammar of the Quichua language as a heterogeneous collection of notes on all sorts of subjects, and can scarcely take a place among serious works. The author was a native of Arequipa, of good family, but he was carried away by enthusiasm and allowed his imagination to run riot.[9]

The gospel of St. Luke, with Aymara and Spanish in parallel columns, was translated from the vulgate by Don Vicente Pazos-kanki, a graduate of the University of Cuzco, and published in London in 1829;[10] and more recently a Quichua version of the gospel of St. John, translated by Mr. Spilsbury, an English missionary, has appeared at Buenos Ayres.[11] These publications and others of the same kind have a tendency to preserve the purity of the language, and are therefore welcome to the student of Incarial history.

Quichua has been the subject of detailed comparative study by more than one modern philologist of eminence. The discussion of the Quichua roots by the learned Dr. Vicente Fidel Lopez is a most valuable addition to the literature of the subject; while the historical section of his work is a great aid to a critical consideration of Montesinos and other early authorities. Whatever may be thought of his theoretical opinions, and of the considerations by which he maintains them, there can be no doubt that Dr. Lopez has rendered most important service to all students of Peruvian history.[1] The theoretical identification of Quichuan roots with those of Turanian and Iberian languages, as it has been elaborated by Mr. Ellis, is also not without its use, quite apart from the truth or otherwise of any linguistic theory.[2]

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[1] *Arte de la lengua Yunga de los valles del Obispado de Truxillo, con un confesionario, y todos las ovaciones cristianas y otras casas. Autor el beneficiado Don Fernando de la Carrera Cura y Vicario de San Martin de Reque en el corregimiento de Chiclayo* (Lima, 1644).

This work is extremely rare. Only three copies are known to exist, one in the library at Madrid, one in the British Museum, which belonged to M. Ternaux Compans, and one in possession of Dr. Villar, in Peru. A copy was made for William von Humboldt from the British Museum copy, which is now in the library at Berlin.

The *Arte de la lengua Yunga* was reprinted in numbers of the *Revista de Lima* in 1880, under the editorial supervision of Dr. Gonzalez de la Rosa.

[2] *Sermones de los misterios de nuestra Santa Fé catolica, en lengua Castellana, y la general del Inca. Impugnanse los errores particulares que los Indios han tenido, por el Doctor Don Fernando de Avendaño, 1648.* Rivero and Von Tschudi give some extracts from these sermons in the *Antiguedades Peruanas*, p. 108.

[3] *Rituale seu Manuale Peruanum juxta ordinem Sanctæ Romanæ Ecclesiæ, per R. P. F. Ludovicum Hieronymum Orerum* (Neapoli, 1607).

[4] Carter-Brown, ii. 7.

[5] *Primera parte de la miscelanea austral de Don Diego D'Avalos y Figueroa en varias coloquias, interlocutores Delia y Cilena, con la defensa de Damas. Impreso en Lima por Antonio Ricardo, año 1602.*

[6] *Die Kechua Sprache, I.; Sprachlehre, II.; Wörterbuch, von J. J. Von Tschudi* (Wien, 1853).

[7] *Gramatica y Diccionario de la lengua general de Peru, llamada comunmuente Quichua, por el R. P. Fr. Honorio Mossi, Misionero Apostolico del colejio de propaganda fide de la ciudad de Potosi* (Sucre, 1859). [An earlier *Gramática y Ensayo* was published at Sucre in 1857. Leclerc says it has become very rare. — ED.]

[8] *Gramatica Quichua o del idioma del Imperio de los Incas, por José Dionisio Anchorena* (Lima, 1874).

[9] *Elementos de Gramatica Quichua ó idioma de los Yncas por el Dr. José Fernandez Nodal.* The book was printed in England in 1874.

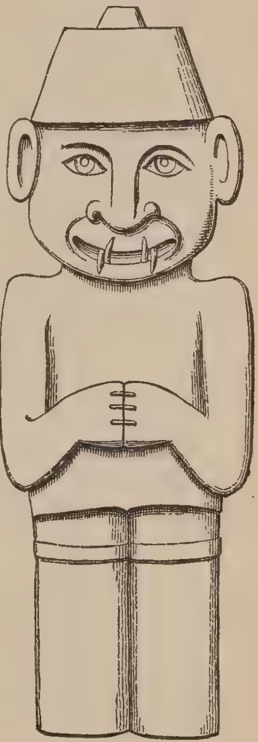
[10] *El Evangelio de Jesu Christo segun San Lucas en Aymara y Español, traducido de la vulgata Latin al Aymará por Don Vicente Pazos-kanki, Doctor de la Universidad del Cuzco e Individuo de la Sociedad Historica de Neuva York* (Londres, 1829).

[11] *Apunchis Santa Yoancama Ehuangeliun, Quichua cayri Ynca siminpi quillkcasca. El Santo Evangelio de Nuestro Señor Jesu-Christo segun San Juan, traducido del original a la lengua Quichua o del Ynca; por el Rev J. H. Gybbon Spilsbury, Buenos Aires, 1880.*

Editorial labors connected with the publication of the text and of translations of the Inca drama of Ollantay have recently conduced, in an eminent degree, to the scholarly study of Quichua, while they have sensibly contributed to a better knowledge of the subject. Von Tschudi was the first to publish the text of Ollantay, in the second part of his *Kechua Sprache*, having given extracts from the drama in the chapter on the Quichua language in the *Antigüedades Peruanas.* After a long interval he brought out a revised text with a parallel German translation,[3] from his former manuscript, collated with another bearing the date of La Paz, 1735.

The drama, in the exact form that it existed when represented before the Incas, is of course lost to us. It was handed down by tradition until it was arranged for representation, divided into scenes, and supplied with stage directions in Spanish times. Several manuscripts were preserved, which differ only slightly from each other; and they were looked upon as very precious literary treasures by their owners. The drama was first publicly brought to notice by Don Manuel Palacios, in the *Museo Erudito,* a periodical published at Cuzco in 1837; but it was not until 1853 that the text was printed by Von Tschudi. His manuscript was copied from one preserved in the Dominican monastery at Cuzco by one of the monks. The transcription was made between 1840 and 1845 for the artist Rugendas, of Munich, who gave it to Von Tschudi. There was another old manuscript in the possession of Dr. Antonio Valdez, the priest of Sicuani, who lived in the last century, and was a friend of the unfortunate Tupac Amaru. Dr. Valdez died in 1816; and copies of his manuscript were possessed by Dr. Pablo Justiniani, the aged priest of Laris, a village in the heart of the eastern Andes, and by Dr. Rosas, the priest of Chinchero. The present writer made a copy of the Justiniani manuscript at Laris, which he collated with that of Dr. Rosas. In 1871 he published the text of his copy, with an attempt at a literal English translation.[4] In 1868 Dr. Barranca published a Spanish translation from the text of Von Tschudi, now called the Dominican text.[5] The Peruvian poet Constantino Carrasco afterwards brought out a version of the drama of Ollantay in verse, paraphrased from the translation of Barranca.[6] The enthusiastic Peruvian student, Dr. Nodal, printed a different Quichua text with a Spanish translation, in parallel columns, in 1874.[7]

There are other manuscripts, and a text has not yet been derived from a scholarly collation of the whole of them. There is one in the possession of Dr. Gonzalez de la Rosa, which belonged to Dr. Justo Sahuaraura Inca, Archdeacon of Cuzco, and descendant of Paullu, the younger son of Huayna Ccapac. In 1878 the Quichua scholar and native of Cuzco, Don Gavino Pacheco Zegarra, published the text of Ollantay at Paris, from a manuscript found among the books of his great-uncle, Don Pedro Zegarra. He added a very free translation in French, and numerous valuable notes. The work of Zegarra is by far the most important that has appeared on this subject, for the accomplished Peruvian has the great advantage of knowing Quichua



FROM TIMANÁ.*

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[1] *Les Races Aryennes du Pérou, leur langue, leur religion, leur histoire, par Vicente Fidel Lopez* (Paris et Montevideo, 1871). [Lopez's book was subjected to an examination by Lucien Adam, in a paper, "Le Quichua, est il une langue aryenne?" in the Luxembourg *Compte-Rendu du Congrès des Américanistes*, ii. 75. Cf. *Macmillan's Mag.*, xxvii. 424, by A. Lang. — Ed.]

[2] *Peruvia Scythica. The Quichua language of Peru: its derivation from Central Asia, with the American languages in general, and with the Turanian and Iberian languages of the Old World, including the Basque, the Lycian, and the Pre-Aryan language of Etruria; by Robert Ellis, B. D.* (Trübner & Co., London, 1875).

[3] *Ollanta: ein Altperuanisches Drama aus der Kechuasprache, übersetzt und commentirt von J. J. von Tschudi* (Wien, 1875).

[4] *Ollanta, an ancient Inca Drama*, by Clements R. Markham (London, 1871).

[5] *Ollanta o sea la severidad de un padre y la clemencia de un rey drama traducido del Quichua al Castellano por José S. Barranca* (Lima, 1868).

[6] *Ollanta por Constantino Carrasco* (Lima, 1876).

[7] *Los vinculos de Ollanta y Cusi Kcoyllor, Drama en Quichua. José Fernandez Nodel.* Dr. Nodal commenced, but never completed, an English translation.

* [After a cut in William Bollaert's *Antiquarian Researches*, etc., p. 41, showing a stone figure from Timana in New Granada, an antiquity of the Muiscas, found in a dense forest, with no tradition attached. — Ed.]

from his earliest childhood. With this advantage, not possessed by any previous writer, he unites extensive learning and considerable critical sagacity.[1]

The reasons for assigning an ancient date to this drama of Ollantay are conclusive in the judgment of all Quichua scholars. On this point there is a consensus of opinion. But General Mitre, the ex-President of the Argentine Republic, published an essay in 1881, to prove that Ollantay was of Spanish origin and was written in comparatively modern times.[2] The present writer replied to his arguments in the introduction (p. xxix) to the English translation of the second part of *Cieza de Leon* (1883), and this reply was translated into Spanish and published at Buenos Ayres in the same year, by Don Adolfo F. Olivares, accompanied by a critical note from the pen of Dr. Vicente Lopez.[3] The latest publication on the subject of Ollantay consists of a series of articles in the *Ateneo de Lima*, by Don E. Larrabure y Unanue, the accomplished author of a history of the conquest of Peru, not yet published. The general conclusion which has been arrived at by Quichua scholars, after this thorough sifting of the question, is that, although the division into scenes and the stage directions are due to some Spanish hand, and although some few Hispanicisms may have crept into some of the texts, owing to the carelessness or ignorance of transcribers, yet that the drama of Ollantay, in all essential points, is of Inca origin. Several old songs are imbedded in it, and others have been preserved by Quichua scholars at Cuzco and Ayacucho, and in the neighborhood of those cities. The editing of these remains of Inca literature will, at some future time, throw further light on the history of the past. There are several learned Peruvians who devote themselves to Incarial studies, besides Señor Zegarra, who now resides in Spain. Among them may be mentioned Dr. Villar of Cuzco, a ripe scholar, who has recently published a closely reasoned essay on the word *Uira-cocha*, Don Luis Carranza, and Don Martin A. Mujica, a native of Huancavelica.

III. THE NEW GRANADA TRIBES. — The incipient civilization of the Chibchas or Muiscas of New Granada was first made generally known by Humboldt (*Vues des Cordillères*, octavo ed., ii. 220–67; *Views of Nature*, Eng. trans., 425). Cf. also, E. Uricoechea's *Memorias sobre las Antigüedades néo-granadinas* (Berlin, 1854); Bollaert; Rivero and Von Tschudi; Nadaillac, 459; and Joseph Acosta's *Compendio historico del Descubrimiento de la Nueva Granada* (Paris, 1848; with transl. in Bollaert).

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[1] *Collection Linguistique Americaine. Tome iv. Ollantaï, drama en vers Quechuas du temps des Incas traduit et commenté, par Gavino Pacheco Zegarra* (Paris, 1878), pp. clxxiv and 265.

[2] *Ollantay. Estudio sobre el drama Quichua, por Bartolomé Mitre, publicada en la Nueva Revista de Buenos Ayres* (1881).

[3] *Poesia Dramatica de los Incas. Ollantay, por Clemente R. Markham traducida del Ingles por Adolfo F. Olivares, y seguido de una carta critica del Dr. Don Vicente Fidel Lopez* (Buenos Ayres, 1883).

CHAPTER V.

THE RED INDIAN OF NORTH AMERICA IN CONTACT WITH THE FRENCH AND ENGLISH.

BY GEORGE E. ELLIS, D.D., LL.D.

President of the Massachusetts Historical Society.

THE relations into which the first Europeans entered with the aborigines in North America were very largely influenced, if not wholly ecided, by the relations which they found to exist among the tribes on heir arrival here. Those relations were fiercely hostile. The new-comers n every instance and in every crisis found their opportunity and their mmunity in the feuds existing among tribes already in conflict with each ther. This state of things, while it gave the whites enemies, also furished them with allies. So far as the whites could learn in their earliest nquiries, internecine strife had been waging here among the natives from n indefinite past.

Starting, then, from this hostile relation between the native tribes of he northerly parts of the continent, we may trace the development of our ubject through five periods :—

1. The first period, a very brief one, is marked by the presence of a ingle European nationality here, the French, for whom, under stringency f circumstance that he might be in friendly alliance with one tribe, Cham-lain was compelled to espouse its existing feud with other tribes.

2. The next period opens with the appearance and sharp rivalry here f a second European nationality, the English, the hereditary foe of the rench, transferring hither their inherited animosities, amid which the ndians were ground as between two mill-stones.

3. Upon the extinction of French dominion on the continent by the nglish, the former red allies of the French, with secret prompting and elp from the dispossessed party, were stirred with fresh animosities against he victors.

4. Yet again the open hostilities of contending Indian tribes were largely urned to account, to their own harm, in their respective alliances with the nglish colonies or with the mother-country in the War of Independence.

5. The closing period is that which is still in progress as covering the elations with them of the United States government. The old hostilities etween those tribes have been steadily of less account in affecting their

later fortunes; and our government has not found it essential or expedient to aggravate its own severity against its Indian subjects, or "wards," by availing itself of the feuds between them.

The same antagonisms which had kept the Indian tribes in hostility with each other prevented their effective alliance among themselves against the whites, and also embarrassed the English and French rivals, who sought to engage them on their respective sides. Many attempts were made by master chiefs among the savages, from the first intrusion of the Europeans, to organize combinations, or what we call "conspiracies," of formerly contending tribes against the common foe. The first of them, formidable though limited in its consequences, was made in Virginia in 1622. Only two of these schemes proved otherwise than wholly abortive. That of King Philip in New England, in 1675, was effective enough to show what havoc such a combination might work. That of Pontiac, in 1763, was vastly more formidable, and was thwarted only by a resistance which engaged at several widely severed points all the warlike resources of the English. But the inherent difficulties, both of combining the Indian tribes among themselves, and of engaging some of them in alliance on either side with the French and the English contestants, were vastly increased by the seeds of sharp dissension sown among them through the rivalries in trade and temptations offered in the fluctuating prices of peltries. Even the long-standing league of the Five Nations was ruptured by the resolute English agent Johnson. He succeeded so far as to secure a promise of neutrality from some of them, and a promise of friendly help from one of them. There were some in each of the tribes falling not one whit behind the sharpest of the whites in skilled sagacity and calculation, who were swift to mark and to interpret the changes in the balance of fortune, as one or the other of the parties of their common enemies made a successful stroke for ascendency.

The facilities for alliance with one or another native tribe against its enemies made for the Europeans a vast difference in the results of their warfare with the aborigines. One might venture positively to assert that the occupancy of this continent by Europeans would have been indefinitely deferred and delayed had all its native tribes, in amity with each other, or willing for the occasion to arrest their feuds, made a bold and united front to resist the first intrusion upon their common domains. Certainly the full truth of this assertion might be illustrated as applicable to many incidents and crises in the first feeble and struggling fortunes of our original colonists in various exposed and inhospitable places. In many cases absolute starvation was averted only by the generous hospitality of the Indians. Taking into view the circumstances under which, from the first, tentative efforts were made for a permanent occupancy by the whites on our whole coast from Nova Scotia to Florida, and along the lakes and great western valleys, we must admit that their fortunes had more of peril than of promise. While, of course, we must refer their success and security

1 large measure to the forbearance, tolerance, and real kindliness of the atives, yet it was well proved that as soon as the jealousy of these natives as stirred at any threatened encroachment, only their own feuds disabled hem from any united opposition, and gave to one or another tribe the alter-ative of fighting the white intruders or of an alliance with them against heir neighbor enemies. The whole series of the successive encroachments f Europeans on this continent is a continuous illustration of the success-ul turning to their own account of the strife of Indians against Indians. nd when two rival European nationalities opened their two centuries of arfare for dominion on this continent, each party at once availed itself of ed allies ready to renew or prolong their own previous hostilities.

The French Huguenots in Florida and the Spaniards who massacred hem had each of them allies among the tribes which were in mutual hos-lity. Champlain was grievously perplexed by the pressure, to which none ne less he yielded, that if he would be in amity with the Hurons he must spouse their deadly enmity with the Iroquois. Even the poor remnants of ne tribe with which the Pilgrims of Plymouth made their treaty of peace, hich lasted for fifty years, were the vanquished and tributary representa-ves of a broken people. A sharp war and a more deadly plague had made nat colony a possibility.

And so it comes to pass that, if we attempt to define at any period dur-ng the seventeenth and eighteenth centuries the conflicts between the sav-ges and Europeans on this continent, we have to look for the explanation f any special change in the relations of the Indian tribes to the varying nterests and collisions of the different foreign nationalities in rivalry ere. The hostilities between the French and the English were chronic nd continuous. Frenchman's Bay, at Mt. Desert, preserves the memorial f the first collision, when Argall, from Virginia, broke up the attempted ettlement of Saussaye.[1] As to the later developments of the antagonism, esulting in the extinction of French possession here, we are to refer them 1 about equal measure to two main causes, — the jealousy of the home overnments, and the keen rivalry of the respective colonists for the lucra-ve spoils of the fur trade. The profit of traffic may be regarded as urnishing the prompting for strife on this side of the water, while the assion for territorial conquest engaged the intrigues and the armies of oreign courts in the stakes of wilderness warfare.

In tracing the course of such warfare we must take into our view two very ffective agencies, which introduced important modifications in the methods nd results of that warfare. In its progress these two agencies became nore and more chargeable with very serious consequences. The first of nese is the change induced in the warfare of the Indians by their possession f, leading steadily to a dependence upon, the white man's firearms and upplies. The second is the usage, which the Indians soon learned to be rofitable, of reserving their white prisoners for ransom, instead of subject-ng them to death or torture.

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[1] See Vol. IV. p. 141.

When we read of some of the earliest so-called "deeds" by which the English colonists obtained from the sachems wide spaces of territory on the consideration of a few tools, hatchets, kettles, or yards of cloth, we naturally regard the transaction as simply illustrating the white man's rapacity and cunning in tricking the simplicity of the savage. But we may be sure that in many such cases the Indian secured what was to him a full equivalent for that with which he parted. For, as the whites soon learned by experience, the savages supposed that in such transactions they were not alienating the absolute ownership of their lands, but only covenanting for the right of joint occupancy with the English. And then the coveted tools or implements obtained by them represented a value and a use not measurable by any reach of wild territory. A metal kettle, a spear, a knife, a hatchet, transformed the whole life of a savage. A blanket was to him a whole wardrobe. When he came to be the possessor of firearms and ammunition, having before regarded himself the equal of the white man, he at once became his superior. We shall see how the rivalry between the French and the English for traffic with the Indians, the enterprise of traders in pushing into the wilderness with packhorses, the establishment of trucking houses, the facility with which the natives could obtain coveted goods from either party, and the occasional failure of supplies in the contingencies of warfare, were on many occasions the turning-points in the fights in the wilderness, and in the shifting of savage partisanship from one side to the other, as the fickle allies found their own interests at stake.

It was in 1609, when Champlain invaded the Iroquois country, on the lake that bears his name, that the astounded savages first saw the flash and marked the deadly effect of his arquebuse. But the shock soon spent itself. The weapon was found to be a terrestrial one, made and put to service by a man. The Dutch on the Hudson very soon supplied the Mohawks with this effective instrument for prosecuting the fur trade. The French began the general traffic with the Indians near the St. Lawrence, in metal vessels, knives, hatchets, awls, cotton and woollen goods, blankets, and that most coveted of all the white man's stores, the maddening "fire-water." But farther north and west for full two hundred years, from 1670 quite down to our own time, annual cargoes of these commodities were imported through Hudson Bay by the chartered company, and had been distributed by its agents among those who paid for them in peltries, in such abundance that the savages became really dependent upon them, and gradually conformed their habits to the use of them. Of course, in their raids upon English outposts, the spoils of war in the shape of such supplies added rapacity to their ferocity. It was with a proud flourish that Indian warriors, enriched by the plunder on the field of Braddock's disastrous defeat, strutted before the walls of Fort Duquesne, arrayed in the laced hats, sashes, uniform, and gorgets of British officers.

When Céloron was sent, in 1749, by the governor of Canada, to take possession of interior posts along the Alleghanies, he found at each of the

Indian villages, as at Logstown, a chief centre, from a single to a dozen English traders, well supplied with goods for a brisk peltry traffic. He required the chiefs, on the threat of the loss of his favor, to expel them and to forbid their return. But the Indians insisted that they needed the goods. Some of these traders were worthless reprobates, mostly Scotch-Irish, from the frontiers of Pennsylvania. When Christopher Gist was sent, the next year, by the Ohio Land Company, to follow Céloron and to thwart his schemes, he complained strongly of these demoralized and demoralizing traders. In the evidence given before the British House of Commons on the several occasions when the monopoly and the mode of business of the Hudson Bay Company were under question, the extent to which the natives had come to depend upon European supplies was very strongly brought into notice. It was urged that some of the tribes had actually, by disuse, lost their skill in their old weapons. It was even affirmed that in some of the tribes multitudes had died by freezing and starvation, because their recent supplies had failed them. This dependence of the natives upon the resources of civilization, observable from the opening of their intercourse with the whites, has been steadily strengthening for two hundred years, till now it has become an absolute and heavy exaction upon our national treasury.

The custom which soon came in, to soften the atrocities of Indian warfare by the holding of white prisoners for ransom, was grafted upon an earlier usage among the natives of adopting prisoners or captives. There was a ormal ceremonial in such cases, and after its performance those who would otherwise have been victims were treated with all kindness. The return of a war-party to its own village was attended with widely different maniestations according to the fortune which had befallen it. If it consisted only of a baffled and flying remnant that had failed in its hazardous enterprise, its coming was announced, and received by the old men, women, and youths in the village with howls and lamentations. If, however, it had been uccessful, as proved by rich plunder, reeking scalp-locks, and prisoners, ome runners were sent in advance to announce its approach. Then began a series of orgies, in which the old squaws were the most demonstraive and hideous. While the scalp-locks were displayed and counted, the well-guarded prisoners were exultingly escorted by their captors, the squaws gathering around them with taunts and petty tormentings. The woful ate which was waiting these prisoners was foreshadowed in prolonged ehearsals for its final horrors. One by one they were forced to run the gauntlet from goal to goal, between lines of yelping fiends, under blows nd missiles, stones, sticks, and tomahawks, while efforts were made to trip hem in their course, that they might be pounded in their helplessness when maddened with pain. Any exhibition of weakness or dread did but inensify the malignant frenzy of their tormentors. Those who lived through his ordeal, which was intended to be but a preliminary in the barbaric entertainment, and to stop short of the actual extinction of life, were afterwards, by deliberate preparations made in full view of the prisoners, subjected to all the ingenuities of rage and cruelty which untamed savage fiendishness could devise. The hero who bore the trial without flinching, singing his song of defiance, and in his turn mocking his tormentors because they failed to break his spirit, was most likely to find mercy in a finishing stroke dealt by a magnanimous foe.

Anything like an alleviation of these dread revenges of savage warfare being unallowable, there was open one way of complete relief in the usage of adoption, just referred to. This, however, was never available to the prisoner from his own first motion or prompting. He was wholly passive in the matter. It came solely from the inclination of any one in the village, a warrior or a squaw who, having recently lost a relative, or one whose service was necessary, might select a prisoner from the group as desirable to supply a place that was vacant. There would seem to have been a large liberty allowed in the exercise of this privilege, especially for those who were mourning for a relative lost in the encounter in which the prisoner was taken. Sometimes the merest caprice might prompt the selection. Scarcely, except in the rare case of some proud captive who would haughtily scorn to avail himself of a seeming affinity with the tribe of a hated or abject enemy, would the offered privilege of adoption be refused. For, in any case, an ultimate escape from an enforced durance might be looked to. Of course those who were thus adopted were mostly the young and vigorous. The little children were not especially favored in the process, — except, as soon to be noted, the children of the whites. The ceremonial for adoption was traditional. Beginning generally with somewhat rough and intimidating treatment, the captive was for a while left in suspense as to his fate. When at length the intent of the arbiter of his life was made known to him, the method pursued has been very frequently described to us in detail by the whites who were the subjects of it.[1] The candidate was plunged and thoroughly soused in a stream to rinse out his white blood; the hair of his head, saving the scalp-lock, was plucked out; and after some mouthings and incantations, completing the initiation, all winning blandishments, arts, and appliances were engaged to secure the confidence of the adopted captive, and to draw from him some responsive sign of affection. He was arrayed in the choicer articles of forest finery, and nestled in the family lodge. The father, the squaw, or the patron, in whatever relation, to whom he henceforward belonged, spared no effort to engage and comfort him. Watchful eyes, of course, jealously guarded any restless motions ooking towards an escape. The final aim was to secure a fully nationalized nd acclimated new member of a tribe, ready to share all its fortunes in eace and war.

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[1] A most graphic and picturesque account of the ceremonies attending the process of adoption is given in the *Narrative of the Captivity of Col. James Smith*. He was taken prisoner, in May, 1755, by two Delaware Indians, and carried to Fort Duquesne. He describes the methods of the men and the women in an Indian town by which he was adopted as one of the Caughnewagos. He shared the life and rovings of the tribe till 1760, when he got back to his home; accompanied Bouquet as a guide; was colonel of a regiment in our Revolutionary War, and afterwards a member of the Kentucky legislature. Here certainly was a varied career.

Naturally there were differences in this whole process and its results, as hey concerned these attempted affiliations between the members of Indian ribes and in the adoption of white captives.[1]

In their early conflicts with the whites, the Indians generally practised an ndiscriminate slaughter. There were a few exceptions to the rule in King Philip's war.[2] In the raids of the French, with their Indian allies, upon the English settlements, prisoners taken on either side came gradually to have he same status as in civilized warfare, and to be held for exchange. This, owever, would proceed upon the supposition that both parties had prisonrs. But before there was anything like equality in this matter, the capives were for the most part such as had been seized from among the whites n inroads upon their settlements, not in the open field of warfare. A midight assault upon some frontier cabins, or upon the lodge of some lonely ettler, left the savages to choose between a complete massacre or upon selection of some of their victims for leading away with them to their wn haunts, if not too cumbersome or dangerous for the wilderness journey. t soon came to be understood among the raiding parties of Indians in lliance with the French in Canada that white captives had a ransom value. Contributions were often gathered up in neighborhoods that had been raided, and in the meeting-houses of New England on Sundays, for redeeming such captives as were known to be in Canada. And, curiously enough, Judge Sewall in his journal records appeals for charity in the same form for the redemption of captives in the hands of our own savages, and for the ransom of our seamen and traders who were kept in durance by African corsairs.

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[1] Governor Colden says that when he first vent among the Mohawks he was adopted by hem. The name given to him was "Cayendergue," which was borne by an old sachem, a iotable warrior. He writes: "I thought no nore of it at that time than as an artifice to draw belly-full of strong liquor from me for himself nd his companions. But when, about ten or welve years after, my business led me among hem," he was recognized by the name, and it erved him in good stead. (*Hist. of Five Nats.*, d ed., i. p. 11.) The savages always took the iberty of assigning names of their own, either eneral or individual, to the Europeans with vhom they had intercourse. The governor of Canada, for the time being, was called "Ononio"; of New York, "Corlear"; of Virginia, "Assarigoa"; of Pennsylvania, "Onas," etc. At a council of the Six Nations with the govrnors of Pennsylvania, Virginia, and Maryland, eld at Lancaster in June, 1744, it came under otice that the governor of Maryland had as et no appellation assigned him by the natives. Much formality was used in providing one for im. It was tried by lot as to which of the ribes should have the honor of naming him. The lot fell to the Cayugas, one of whose chiefs, fter solemn deliberation, assigned the name "Tocarryhogan." (Colden, ii. p. 89.)

[2] From Archives of Massachusetts, vol. lxviii. 193: —

"For the Indian Sagamores, and people that are in warre against us.

"Inteligence is Come to us that you haue some English (especially weomen and children) in Captivity among you. Wee haue therefore sent this messenger, offering to redeeme them either for payment in goods or wompom; or by exchange of prisoners. Wee desire your answer by this our messinger, what price you demand for euery man woman and child, or if you will exchainge for Indians: if you haue any among you that can write your Answer to this our messuage, we desire it in writting, and to that end haue sent paper, pen and Incke by the messenger. If you lett our messenger haue free accesse to you and freedome of a safe returne: Wee are willing to doe the like by any messenger of yours. Prouided he come vnarmed and Carry a white flagg Vpon a Staffe vissible to be seene: which we calle a flagg of truce: and is used by Civil nations in time of warre when any messingers are sent in a way of treaty: which wee haue done by our messenger.

"Boston 31th of March 1676
past by the Council E. R. S. &
was signed

"In testimony whereof I haue set to my hand & Seal. F. L. Gov."

(From *N. E. Hist. and Gen. Register*, Jan'y, 1885, pp. 79, 80.)

In the raids of desolation on either side of the Alleghanies and along the sources of the Susquehannah and the Ohio, from the outbreak of the French and Indian war, down to and even after the crushing of Pontiac's conspiracy, while more than a thousand cabins of the borderers were burned and their inmates mostly slaughtered, several hundred captives were borne off by the Indians and distributed among their villages. The ultimate fate of these captives always hung in dread uncertainty. If a panic arose among the lodges in apprehension of an onset from a war-party of the whites, the captives might be massacred. But the force of circumstances and the urgency of interested motives steadily made it an object for their captors to retain their prisoners unharmed, and even to make captivity tolerable to them. The alternative of death or life to them generally depended upon whether they might escape or be released by an avenging party without compensation, or could be held for redemption through a ransom. The knowledge that the Indians retained such captives of course became a very effective motive in inducing their relatives in the settlements to gather parties of neighbors for following the victims into the forest depths. Temporary truces also, when made by victorious parties of the whites, were conditioned upon the surrender of all their surviving countrymen who were supposed to be in duress. The savages practised all their artifices and subterfuges in concealing some of their prisoners, alleging that they had been carried deeper into the country by new masters, or by positively denying all knowledge of their whereabouts. But the persistency and threats of those who had learned how to deal with these red diplomates, with a few resolute strokes generally brought about their surrender. When Bouquet had secured possession of Fort Duquesne with his army of 1,500 men, he stoutly followed up his success beyond the Ohio to the Indian settlements near the Muskingum, and with his sturdy pluck and strong force he overawed the representatives of the neighboring tribes which he had summoned to meet him. He insisted, as the first condition of a truce, upon the delivery of all the white prisoners secluded among them, not only without the payment of any ransom, but upon their being brought in with a protecting escort and with means of sustenance. Of course there was always ignorance or doubt as to the number of captives in any particular place, and as to the hands into which any individual known or supposed to be in durance might have fallen. The word of an Indian on these points was worthless unless backed by other testimony. A stimulating of the tongue into unguarded speech by a dram of rum might in some cases serve the purpose of the rack or the thumb-screw in more civilized cross-examinations. An uncertainty of course always hung over the survival or the whereabouts of individuals or nembers of a family whose bodies had not been found on the scene of an Indian frontier raid. Bouquet was accompanied by friends and relatives of supposed survivors held in captivity as the spoils of some massacre, and these might be depended upon to circumvent the falsehoods and cunning of the captors, and to insist upon their giving up their prizes. The persistency and the plain evidence of resolved purpose manifested by Bouquet finally compelled from the representatives of the tribes in council a pledge to surender all the prisoners in their hands, and messengers were sent out to gather and bring them in, though with some plausible excuses for delay, and the grudging return of only a part of them. But those who were given up became the best witnesses as to the deception practised by the cunning culprits in holding back others. Only after repeated exposures of alsehood by those so grudgingly surrendered, asserting of their own knowledge that there were others held in durance, whom they might even know by name, was there brought about a full deliverance, saving that, vhether truly or falsely, in the case of a few individuals demanded the excuse was alleged that they belonged to some chief or tribe absent at a disance on a hunt, and so not to be reached by a summons. Bouquet was also absolute in his demand for all such white captives, young or old, as were alleged to have been adopted or married among the tribes. His firmly nsisting upon this, and the compliance with it in many cases, led to some scenic manifestations in the wilderness, of a highly dramatic character, full of the matter of romance in their revelations of the working of human nature under novel and strange conditions. Such manifestations often attended similar scenes in the ransom or forced surrender of whites who had been in captivity among the Indians. But in this special instance of Bouquet's resolute course with the Ohio tribes, numbers, variety, picturesqueness in those manifestations, gave to the bringing in and the recepion of captives features and incidents which strongly engage alike the sympathies and antipathies of human nature. Some of those brought into Bouquet's camp, who had once at least been whites, came with full as much eluctance on their part as that which was felt by those who gave them up. Indeed, several of them could be secured only by being bound and guarded.

Approximation in all degrees to the manners and habits of Indian life and to all the qualities of Indian nature had been realized by Europeans rom the first contact of the races on this continent. Of course the intances were numerous and very decisive in which this approximation was completed, and resulted in a substitution of all the ways and habits of savagery for those of civilization. Many of those who were forced back into Bouquet's camp clung to their Indian friends, and repelled all the manifesations of joy and affection of their own nearest kin by blood. They posiively refused to return to the settlements. They had been won by preference to the fascinations and license of a life in the wilderness. This preference was by no means inexplicable, even for some full-grown men and women who had been reared in the white settlements. Life in scattered cabins on the frontiers had more points of resemblance than of difference in hard conditions and privations, when compared with savage life in the woods. Such society as these scattered cabins afforded was rude and rough, all experiences were precarious, daily drudgery was severe, the solitary homes were gloomy, and only exceptional cases of early domestic and mental training alleviated the stern exigencies of the condition of the first generation of the settlers. For women and children especially, the outlook and the routine of life were dismal enough. As for the men, the more they conformed themselves in many respects to the actual habits and resources of the Indians in the training of their instincts, in their garb, their food, their adaptation of themselves to the ways and resources of nature, the easier was their lot. Many women, likewise made captives by the savages, in some cases of mature age, and having looked forward to the usual lot of marriage, found an Indian to be preferable, or at all events tolerable, as a husband. Children who preserved but a faint remembrance of home and parents very readily adopted savage tastes, and testified by their shrieks and struggles their unwillingness to part from their red friends. Specimens from each of these classes were the most marked and demonstrative among the groups brought in to Bouquet from Indian lodges, being in number more than two hundred. Doubtless, however, the majority of them had had enough of the experiences of savage life to make a return to the settlements a welcome release. Such persons thenceforward constituted a useful class as interpreters, mediators, and messengers between the contending parties. Their knowledge of Indian character, superstitions, limitations, weak and strong points, impulsive excitability, stratagems, and adaptability to circumstance proved on many emergent occasions of good account. Such of these returned captives as had had the rudiments of an education, and were trustworthy as narrators, have made valuable contributions to local history.

Among many such intelligent and trustworthy reporters was Col. James Smith, captured on the borders of Pennsylvania in 1755, when eighteen years of age, and kept in captivity five years. Another was John McCullough, taken at about the same time and from the near neighborhood, when eight years old. He was retained eight years, and, being a quick-witted and observing youth, he kept his eyes and ears open to all that he could learn. From such sources we derive the most authentic information we possess of that transition period in the condition and fortunes of many of our aboriginal tribes when the intrusion of Europeans upon them with their tempting goods and their rival schemes, which equally tended to dispossess them of their heritage, introduced among them so many novel complications. Some of the narratives of the whites, who, under the conditions just referred to, lived for years and were assimilated with the Indians, present us occasionally by no means unattractive pictures of the ordinary tenor of life among them. In the brief intervals of peace, and in some favored recesses where ame abounded and the changing seasons brought round festivals, plays, nd scenes of jollity, there were even fascinations to delight one of simple astes, who could enjoy the aspects of nature, share the easy tramp over iossy trails, content himself with the viands of the wilderness, employ ie long hours of laziness in easy handiwork, delight in basking beneath ie soft hazes of the Indian summer, or listening to the traditional lore of ie winter wigwam. The forests very soon began to be the shelter and the oving haunts of a crew of renegades and outlaws from the settlements, rho assimilated at all points with the savages, and often used what reiained to them of the knowledge and arts of civilization for ingenious urposes of mischief. It has always proved a vastly more easy and rapid rocess for white men to fall back into barbarism than for an Indian to conorm himself to civilization. Wild life brought out all reversionary tendenies, and revived primitive qualities and instincts. It gave those who shared a full opportunity to become oblivious of all fastidious tastes and of all ie squeamishness of over-delicacy. The promiscuous contents of the amp-kettle, with its deposits and incrustations from previous banquets, rere partaken of with a zestful appetite. The circumstances of warfare in ie woods quickened all the faculties of watchfulness, made even the natual coward brave, imparted endurance, and multiplied all the ingenuities of esource and stratagem. There is something that surpasses the merely iarvellous in the feats of sturdy and persevering scouts, escaped captives, emnants of a butchery, messengers sent to carry intelligence in supreme eril, and lonely wayfarers treading the haunted forests, or creeping stealthy through ambushed defiles, penetrating marshes, using the sky and their roodcraft for guidance, fording or swimming choked or icy streams, climbig high tree-tops for a wider survey from the closed woods and thickets, ubsisting on roots and berries and moss, and yielding to the exhaustion f nature only when all perils were passed and the refuge was reached. like on the march of armies and in the siege of some little forest strongold surrounded by yelping savages, it was necessary from time to time to end out a single plucky hero to carry or to obtain intelligence. When uch a messenger was not designated by the commander, and the extremity f the emergency left the dismal honor to a volunteer, such was never found be lacking. It confounds all calculations of the law of chances to learn ow, even in the majority of such dire enterprises as are on record, forine favored the brave. Narratives there are which for ages to come will ather all the exciting elements of tragedy and romance, and occasionally ven of comedy, as, set down in the language of the woods, without the onstraints of art or grammar, they make us for the moment companions of ome imperilled man or woman who borrowed of the bear, the deer, the ox, or the beaver, their several instincts and stratagems for outwitting ursuit and clinging to dear life. Rare, it may be, but still well authentiated, are cases of victims with a strong tenacity of vitality, who, left as ead, mutilated and scalped, reasserted themselves when the foe had gone, found their way back to their homes, and, after such reconstruction as th art of the time would allow, enjoyed a long life afterwards.

The conditions attending the entrance of European war-parties, wit their necessary supplies, into the depths of the wilderness were of the mos severe and exacting character. They involved equally the outlay of to and an exposure to perils requiring the most watchful vigilance. Well-worn trails made by the natives, and always sufficiently travelled to kee them open, had long been in use for such purposes as were needed in primitive conditions. These were very narrow, necessitating that progres should be made through them singly, in "Indian file." At portages or carrying-places, burdens were borne on the back from one watercourse t another, round a rapid or across an elevation. Some of these trails ar even now traceable in the oldest settled portions of the country, where th woods have never been wholly cleared. Part of that which was availed o by the whites two hundred and fifty years ago between Plymouth and Boston, and others in untilled portions of the Old Colony, are clearly discernible. The thickets and undergrowths came close to the borders of thes trails, and the overhanging branches of the trees were found a grievou annoyance when the earliest traders with pack-horses traversed them. I a large part of our present national domain and in Canada, it may safel be said that nineteen twentieths of all movement from place to place wa made by the savages by the watercourses of lake and stream, and the sam was done by the Europeans till they brought into use horses first, and the carts. These were first put to service by the traders from the English settlements on the frontiers of Pennsylvania and Virginia. The pack-horses heavily laden, trained to their rough service for rocky and marshy grounds as well as for the thick and stifling depths of the forest, and able to subsist on very poor forage, carried goods most prized by the natives, and generally in inverse ratio to their real worth. They returned to the settlements from the Indian villages with a burden of precious furs, the trafficker mutually finding their account in their respective shares in barter and profit These traders with their pack-horses were for a long time the pioneers o the actual settlers. The methods and results of their traffic, trifling as the may seem to be, had the two leading consequences of critical importance first, they made the Indians acquainted with and dependent upon the whit man's goods, and then they provoked and embittered the rival competition between the French and the English for the considerable profits.

What we now call a military road was first undertaken on a serious scal in the advance of the disastrous expedition of General Braddock, in 1755 over the Alleghanies to the forks of the Ohio. The incumbrances wit which he burdened himself might wisely have been greatly reduced in kin and in amount. But the exigencies of the service in which he was engage were but poorly apprehended by him. As in the case of the even mor disastrous campaign of General Burgoyne, twenty-two years later, (1777 though his route was mainly by water, the camp was lavishly supplied wit appliances of luxury and sensuality. Braddock's way for his cattle, carts, and artillery was slowly and poorly prepared by pioneers in advance, levelling trees, stiffening marshy places, removing rocks and bushes, and then leaving huge stumps in the devious track to rack the wagons and torment the draught animals. It is not without surprise that we read of the presence of domestic cattle far off in the extreme outposts of single persevering settlers. But when, on the first extensive military expeditions for building a fort on the shore of a lake, at river forks, or to command a portage, we find mention of cannon and heavy ammunition, we marvel at the perseverance involved in their transportation. The casks of liquor, of French brandy and of New England rum, which generally, without stint, formed a part of the stores of each military enterprise, furnished in themselves a motive spirit which facilitated their transport. Flour and bread could, with many risks from stream and weather, be carried in sacks. But pork and beef in pickle, the mainstay in garrisons which could not venture out to hunt or fish, required to be packed in wood. After all the persevering toil engaged in this transportation, the dire necessities of warfare under these stern conditions often compelled the destruction of the stores, every article of which had tasked the strained muscles and sinews of the hard-worked campaigners. When it was found necessary to evacuate a forest post, the stockade was set on fire, the magazine was exploded, the cannon spiked, the powder thrown into the water, and everything that could not be carried off in a hasty retreat was, if possible, rendered useless as booty. As the French and English military movements steadily extended over a wider territory and at more numerous points, with increased forces, the waste and havoc caused by disasters on either side involved an enormous destruction of the materials of war. Vessels constructed with incredible labor on the lakes, anvils, cordage, iron, and artillery having been gathered for their building and arming by perilous ocean voyages and by transit through inner waters and portages, and thousands of bateaux for Lakes Champlain and George, now lie sunken in the depths, most of them destroyed by those in whose service they were to be employed. The "Griffin," the first vessel on Lake Erie, built by La Salle in 1679, disappeared on her second voyage, and lies beneath the waters still. After Braddock's defeat, when the fugitive remnant of his army had reached Dunbar's camp, a hundred and fifty wagons were burned, and fifty thousand pounds of powder were emptied into a creek, after the incredible toil by which they had been drawn over the mountains and morasses.

There were many occasions and many reasons which prompted the Europeans to weigh the gain or loss which resulted to them from the employment of Indian allies, who were always an incalculable element in any enterprise. They could never be depended upon for constancy or persistency. A bold stroke, followed, if successful, with butchery, and a rush to the covert of the woods if a failure, was the sum of their strategy. They had a quick eye in watching the turning fortunes and the probable issue of a venture, and they acted accordingly. They were wholly disinclined for any protracted siege operations. In the weary months of the investment of Detroit, the only enterprise of the sort engaged in by large bodies of savages acting in concert, we find a single exceptional case of their uniform impatience of such prolonged strategy. And even in that case there were intervals when the imperilled and starving garrison had breathing-spells for recuperation. Charges and counter-charges, pleas and criminations of every kind, plausible, false, or sincere, are found in the journals and reports of English and French officers, prompted by accusations and vindications of either party, called out by the atrocities and butcheries wrought by their savage allies in many of the conflicts of the French and Indian war. In vain did the commanders of the white forces on either side promise that their red allies should be restrained from plunder and barbarity against the defeated party. It was an attempt to bridle a storm. From the written opinions expressed by various civil and military officials during all our Indian wars one might gather a list of judgments, always emphatically worded, as to the qualities of the red men as allies. Governor Dinwiddie, writing in May 28, 1756, to General Abercrombie, on his arrival here to hold the chief command till the coming of Lord Loudon, expresses himself thus: "I think we have secured the Six Nations to the Northward to our Interest who, I suppose, will join your Forces. They are a very awkward, dirty sett of People, yet absolutely necessary to attack the Enemy's Indians in their way of fighting and scowering the Woods before an Army. I am perswaded they will appear a despicable sett of People to his Lordship and you, but they will expect to be taken particular Notice of, and now and then some few Presents. I fear General Braddock despised them too much, which probably was of Disservice to him, and I really think without some of them any engagement in the Woods would prove fatal, and if strongly attached to our Interest they are able in their way to do more than three Times their Number. They are naturally inclined to Drink. It will be a prudent Stepp to restrain them with Moderation, and by some of your Subalterns to shew them Respect."[1] Baron Dieskau, in 1755, had abundant reason for expressing himself about his savage auxiliaries in this fashion: "They drive us crazy from morning to night. One needs the patience of an angel to get on with these devils, and yet one must always force himself to seem pleased with them."[2]

It would seem as if the native tribes, when Europeans first secured a lodgment, were beguiled by a fancy which in most cases was very rudely dispelled. This fancy was that the new-comers might abide here without displacing them. The natives in giving deeds of lands, as has been said, had apparently no idea that they had made an absolute surrender of territory. They seem to have imagined that something like a joint occuancy was possible, each of the parties being at liberty to follow his own ays and interests without molesting the other. So the Indians did not nove off to a distance, but frequented their old haunts, hoping to derive dvantage from the neighborhood of the white man. King Philip in 1675 iscerned and acutely defined the utter impracticability of any such joint ccupancy. He indicated the root of the impending ruin to his own race, nd he found a justification of the conspiracy which he instigated in pointng to the white man's clearings and fences, and to the impossibility of oining planting with hunting, and domestic cattle with wild game.

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[1] *Dinwiddie Papers*, ii. p. 426.

[2] Quoted in Parkman's *Montcalm and Wolfe*, i. p. 297.

The history of the Hudson Bay Company and that of the enterprises conucted by the French for more than a century, when set in contrast with he steady development of colonization by English settlers and by the people f the United States succeeding to them, brings out in full force the ifferent relations into which the aborigines have always been brought by he presence of Europeans among them, either as traders or possessors of erritory. The Hudson Bay Company for exactly two centuries, from 1670 o 1870, held a charter for the monopoly of trade with the Indians here over n immense extent of territory, and in the later portion of that period held n especial grant for exclusive trade over an even more extended region, urther north and west. The company made only such a very limited occuancy of the country, at small and widely distant posts, as was necessary or its trucking purposes and the exchange of European goods for pelries. During that whole period, allowing for rare casualties, not a single ct of hostility occurred between the traders and the natives. A large umber of different tribes, often at bitter feud with each other, were all ept in amity with the official residents of the company, and each party robably found as much satisfaction in the two sides of a bargain as is sual in such transactions. Deposits of goods were securely gathered in ome post far off in the depths of the wilderness, under the care of two or hree young apprentices of the company, and here bands of Indians at the roper season came for barter. Previous to the operations of this comany, beginning as early as 1620, large numbers of Frenchmen, singly or parties, ventured deep into the wilderness in company with savage ands, for purposes of adventure or traffic, and very rarely did any of them eet a mishap or fail to find a welcome. Such adventurers in fact became most cases Indians in their manner of life. Nor did the jealousy of he savages manifest itself in a way not readily appeased when they found he French priests planting mission stations and truck-houses. In no case id the French intruders ask, as did the English colonists, for deeds of teritory. It was understood that they held simply by sufferance, and with a iew to mutual advantage for both parties, with no purpose of overreachg. The relations thus established between the French and the natives ontinued down till even after the extinction of the territorial claims of rance. And when, just before the opening of the great French and Inian hostilities with the English colonists, the French had manifested their purpose to get a foothold on the heritage of the savages by pushing a line of strongly fortified posts along their lakes and rivers, the apprehensions of the savages were craftily relieved by the plea that these securities were designed only to prevent the encroachment of the English.

A peaceful traffic with the Indians, like that of the Hudson Bay Company and the French, had been from the first but a subordinate object of the English colonists. These last, while for a period they confined themselves to the seaboard, supplemented their agricultural enterprise by the fishery and by a very profitable commerce. As soon as they began to penetrate into the interior they took with them their families and herds, made fixed habitations, put up their fences and dammed the streams. Instead of fraternizing with the Indians, they warned them off as nuisances. We must also take into view the fact that this steadily advancing settlement of the Indian country directly provoked and encouraged the resolute though baffled opposition of the savages. They could match forces with these scattered pioneers, even if, as was generally the case, a few families united in constructing a palisadoed and fortified stronghold to which they might gather for refuge. If a body of courageous men had advanced together well prepared for common defence, it is certain the warfare would not have been so desultory as it proved to be. All the wiles of the Indians in conducting their hostilities gave them a great advantage. They thought that the whites might be dislodged effectually from further trespasses if once and again they were visited by sharp penalties for their rash intrusion. It was plain that they were long in coming to a full apprehension of the pluck of their invaders, of their recuperative energies, and of the reserved forces which were behind them. From the irregular base line of the coast the English advanced into the interior, not by direct parallel lines, but rather by successive semicircles of steadily extending radii. The advances from the middle colonies of Pennsylvania and Virginia marked the farthest reaches in this curvature. The French, in the mean while, aimed from the start for occupying the interior.

The period which we have here under review is one through which the savages, for the most part, were but subordinate agents, the principals being the French and the English. So far as the diplomatic faculties of the savages enabled them to hold in view the conditions of the strife, there were doubtless occasions in which they thought they held what among civilized nations is called the balance of power. Nor would it have been strange if, at times, their chiefs had imagined that, though it might be impossible for them again to hold possession of their old domains free from the intrusion of the white man, they might have power to decide which of the two nationalities should be favored above the other. In that case the French doubtless would have been the favored party. We have, however, to take into view the vast disproportion between the numbers, if not of the resources, of these two foreign nationalities, when the struggle between them

rnestly began. In 1688 there were about eleven thousand of the French
America, and nearly twenty times as many English. The French were
ified under the control of their home government. Its resources were
their call: its army and navy, its arsenals and treasury, its monarch and
inisters, might be supposed to be serviceable and engaged for making its
astery on this continent secure. The English, however, were only nomi-
lly, and as regards some of the colonies even reluctantly and but trucu-
ntly, under the control of their home government. It had been the
alous policy of the New England colonists, from their first planting, to
olate themselves from the mother-country, and to make self-dependence
e basis of independence. Their circumstances had thrown them on their
wn resources, and made them feel that as their foreign superiors could
now very little of their emergencies, it was not wise or even right in
em to interpose in their affairs. Indeed, it is evident that all the
ritish colonists felt themselves equal, without advice or help from abroad,
take care of themselves, if they had to contend only against the savages.
ut when the savages had behind them the power of the French mon-
rch, it was of necessity that the English should receive a reinforce-
ent from their own countrymen. In the altercations with the British
inistry which followed very soon after the close of the French and In-
ian war, a keenly argued question came under debate as to the claim
hich the mother-country had upon the gratitude of her colonists for com-
g to their rescue when threatened with ruin from their red and white
nemies. And the answer to this question was judged to depend upon
hether, in sending hither her fleets and armies, Britain had in view an ex-
ension of her transatlantic domains or the protection of her imperilled sub-
ects. At any rate, there were jealousies, cross-purposes, and an entire lack
f harmony between the direct representatives of English military power
nd the coöperating measures of the colonial government. Never, under
ny stress of circumstances, was England willing to raise even the most
erviceable of the officers of the provincial forces to the rank of regulars
her own army. The youthful Washington, whose sagacity and prowess
ad proved themselves in field and council where British officers were so
umiliated, had to remain content with the rank of a provincial colonel.
or did the provincial legislatures act in concert either with each other, or
ith the advice and appeals of their royal governors in raising men, money
r supplies for combined military operations against common enemies.
ach of the colonies thought it sufficient to provide for itself. Each was
ven dilatory and backward when its own special peril was urgent. These
mbarrassments of the English did very much to compensate the French
r their great inferiority in numerical strength. We are again to remind
urselves of the fact that the French, alike from their temperament and
heir policy, were always vastly more congenial and influential with the
avages.

The French in Canada from the first adopted the policy of alliance with native tribes. Though their warfare with the English was hardly intermittent, there were several occasions when it was specially active. Beginning with the first invasion of the Iroquois territory by Champlain, in 1609, already mentioned, under the plea of espousing the side of his friends and allies, the Hurons and Algonquins, other like enterprises were later pursued. Courcelles, in 1666, made a wild and unsuccessful inroad upon the Iroquois. Tracy made a more effective one in the same year. De la Barre in 1684, Denonville in 1687, and Frontenac in 1693 and 1696, repeated these onsets. The last of these invasions of what is now Central New York was intended to effect the complete exhaustion of the Indian confederacy. Its havoc was indeed well-nigh crushing, but there was a tenacity and a recuperative power in that confederacy of savages which yielded only to a like desolating blow inflicted by Sullivan, under orders from Washington, in our Revolutionary War.

This formidable league of the Five Nations, when first known to Europeans, claimed to have obtained by conquest the whole country from the lakes to the Carolinas, and from the Atlantic to the Mississippi. France, as against other Europeans, though not against the Indians, claimed the same territory. Great Britain claimed the valley of the Ohio and its tributaries, first against the French as being merely the longitudinal extension of the line of sea-coast discovered by English navigators, and then through cessions from and treaties with the Five Nations. The first of these treaties was that made at Lancaster, Pa., in June, 1744. But the Indians afterwards complained that they had been overreached, and had not intended to cede any territory west of the Alleghanies. Here, of course, with three parties in contention, there was basis enough for struggles in which the prize, all considerations of natural justice being excluded, was to be won only by superior power. Neither of the rivals and intruders from across the ocean dealt with the Indians as if even they had any absolute right to territory from which they claimed to have driven off former possessors. So the Indian prerogative was recognized by the French and the English as available only on either side for backing up some rival claim of the one or the other nation ; though when the mother-countries were at peace in Europe, their subjects here by no means felt bound even to a show of truce, and they were always most ready to avail themselves of a declaration of war at home to make their wilderness campaigns. It is curious to note that in all the negotiations between the Indians and Europeans, including those of our own government, the only landed right recognized as belonging to the savages was that of giving up territory. The prior right of ownership by the tenure of possession was regarded as invalidated both by the manner in which it had been acquired and by a lack to make a good use of it.

It was in the closing years of the seventeenth century and in those opening the eighteenth that the military and the priestly representatives of France in Canada resolutely advised and undertook the measures which omised to give them a secure and extended possession of the whole north the continent, excepting only the strip on the Atlantic seaboard then mly held by the English colonists. Even this excepted region of terri- ry was by no means, however, regarded as positively irreclaimable, and litary enterprises were often planned with the aim of a complete extinc- n of English possession. The French in their earliest explorations, in netrating the country to the west and to the south, had been keenly servant in marking the strategic points on lake and river for strongholds ich should give them the advantage of single positions and secure a ain of posts for easy and safe communications. Their leading object was gain an ascendency over the native tribes; and as they could not expect sily and at once to get the mastery over them all, policy dictated such skilful turning to account of their feuds among themselves as would cure strong alliances of interest and friendship with the more powerful es. The French did vastly more than the English to encourage the ssions of the savages for war and to train them in military skill and arti- e, leaving them for the most part unchecked in the indulgence of their ocity. It is true that the Dutch and the English had the start in supply- g the savages with firearms, under the excuse that they were needed by e natives for the most effective support of the rapidly increasing trade in ltries. But the French were not slow to follow the example, as it pre- nted to them a matter of necessity. And through the long and bloody uggle between the two European nationalities with their red allies, it may safely affirmed that the frontier warfare of the English colonists was ged against savages armed as well as led on by the French.

Two objects, generally harmonious and mutually helpful of each other, spired the activity of the French in taking possession successively of sts in the interior of the continent. The first of these was the establish- ent of mission stations for the conversion of the savages. The other ject of these wilderness posts was to secure the lucrative gains of the fur ade from an ever-extending interior. Though, as was just said, these two jects might generally be harmoniously pursued, it was not always found sy or possible to keep them in amity, or to prevent sharp collisions be- een them. There was a vigorous rivalry in the fur trade between the embers of an associated company, with a government monopoly for the affic, and very keenly enterprising individuals who pursued it, with but tle success in concealing their doings, in defiance of the monopolists. e burden of the official correspondence between the authorities in Canada d those at the French court related to the irregularities and abuses of is traffic. Incident to these was a lively plying of the temptations of that her traffic which poured into the wilderness floods of French brandy. e taste of this fiery stimulant once roused in a savage could rarely after- rds be appeased. The English colonists soon gained an advantage in is traffic in their manufacture of cheap rum. It is easy to see how this alry between monopolists and individuals in the fur trade, aided by the stimulant for which the Indian was most craving, would impair the spiritual labors of the priests at their wild stations. Nor were there lacking instances in which the priests themselves were charged with sharing not only the gains of the fur trade, but also those of the brandy traffic, either in the interests of the monopolists or of individuals.

The earliest extended operations of the French fur trade with the Indians were carried on by the northerly route to Lake Huron by the Ottawa River. The French had little to apprehend from English interference by this difficult route with its many portages. But it soon became of vital necessity to the French to take and hold strong points on the line of the Great Lakes. These were on the narrow streams which made the junctions between them. So a fort was to be planted at Niagara, between Ontario and Erie; another at Detroit, between Erie and Huron; another at Michilimackinac, between Michigan and Huron; another at the fall of the waters of Superior into Huron; and Fort St. Joseph, near the head of Lake Michigan, facilitated communication with the Illinois and the Miami tribes; the Ojibwas, Ottawas, Wyandots, and Pottawattomies having their settlements around the westernmost of the lakes, the Sioux being still beyond. South of Lake Erie, in the region afterwards known as the Northwest Territory, between the Alleghanies, the Ohio, and the Mississippi, were the Delawares, the Shawanees, and the Mingoes. It is to be kept in view that this territory, though formally ceded by France to England in the treaty of 1762–63, had previously been claimed by the English colonists as rightfully belonging to their monarch, it being merely the undefined extension of the seacoast held by virtue of the discovery of the Cabots.

The fifth volume of the *Mémoires* published by Margry gives us the original documents, dating 1683–1695, relating to the first project for opening a chain of posts to hold control of, and to facilitate communication between, Canada and the west and south of the continent. The project was soon made to extend its purpose to the Gulf of Mexico. The incursions of the Iroquois and the attempted invasions of the English, with a consequent drawing off of trade from the French, had obliged the Marquis Denonville to abandon some of the posts that had been established. In spite of the opposition of Champigny, Frontenac vigorously urged measures for the repossession and strengthening of these posts. The Jesuits were earnest in pressing the measure upon the governors of Canada. In pushing on the enterprise, the French had sharp experience of the intense hostility of the inner tribes who were to be encountered, and who were to be first conciliated. The French followed a policy quite unlike that of the English in the method of their negotiations for the occupancy of land. The colonists of the latter aimed to secure by treaty and purchase the absolute fee and ownership of a given region. They intended to hold it generally for cultivation, and they expected the Indians then claiming it to vacate it. The French beguiled the Indians by asserting that they had no intention either of purchasing or forcibly occupying, as if it were their own, any spot where they established a stronghold, a trucking or a mission station. They professed to hold only by sufferance, and that, too, simply for the security and benefit of the natives, in furnishing them with a better religion than their own and with the white man's goods. The Iroquois, finding the hunting and trapping of game for the English so profitable on their own territory, were bent on extending their field. They hoped, by penetrating to Michilimackinac, to make themselves the agents or medium for the trade with the tribes near it, so that they could control the whole southern traffic. So they had declared war against the Illinois, the Miamis, the Ottawas, and the Hurons. It was of vital importance to the French to keep firm hold of Lakes Ontario and Erie, and to guard their connections. The Iroquois were always the threatening obstacle. It was affirmed that they had become so debauched by strong drink that their squaws could not nourish their few children, and that they had availed themselves of an adoption of those taken from their enemies. As they obtained their firearms with comparative cheapness from the English on the Hudson and Mohawk, they used them with vigor against the inner tribes with their primitive weapons, and were soon to find them of service against the English on the frontiers of Virginia. So keenly did the English press their trade as to cause a wavering of the loyalty of those Indian tribes who had been the first and the fast friends of the French. Thus it was but natural that the Iroquois should be acute enough to oppose the building of a French stronghold at any of the selected posts.

In 1699,[1] La Mothe Cadillac proposed to assemble their red allies, then much dispersed, and principally the Ottawas, at Detroit, and there to construct both a fort and a village. At the bottom of this purpose, and of the opposition to it, was a contention between rival parties in the traffic. The favorers and the opponents of the design made their respective representations to the French court. De Callières objected to the plan because of the proximity of the hostile Iroquois, who would prefer to turn all the trade to the English, and his preference was to reëstablish the old posts. The real issue to be faced was whether the Indians now, and ultimately, were to be made subjects of the English or of the French monarch. Cadillac combated the objections of Callières, and succeeded in effecting his design at Detroit. The extension of the traffic was constantly bringing into the field tribes heretofore too remote for free intercourse. In each such case it depended upon various contingencies to decide whether the French or the English would find friends or foes in these new parties, and the alternative would generally rest, temporarily at least, upon which party was most accessible and most profitable for trade. It would hardly be worth the while for an historian, unless dealing with the special theme of the rivalries involved in the fur trade as deciding with which party of the whites one or another tribe came into amity, to attempt to trace the conditions and consequences of such diplomacy in inconstant negotiators.

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[1] Margry, v. 135-250.

The English began the series of attempts to bind the Five, afterwards the Six, Nations into amity or neutrality by treaty in 1674. These treaties were wearisome in their formalities, generally unsatisfactory in their terms of assurance, and so subject to caprice and the changes of fortune as to need confirmation and renewal, as suspicion or alleged treachery on either side made them practically worthless. There were two ends to be gained by these treaties of the English with the confederated tribes. The one was to avert hostilities from the English and to secure them privileges of transit for trade. The other object, not always avowed, but implied as a natural consequent of the first, was to alienate the tribes from the French and if possible to keep them in a state of local or general conflict. Each specification of these treaties was to be emphasized by the exchange of a wampum belt. Then a largess of presents, always including rum, was the final ratification. These goods were of considerable cost to the English but always seemed a niggard gift to the Indians, as there were so many to share in them.

The first of this series of treaties was that made in 1674, at Albany, by Col. Henry Coursey, in behalf of the colonists of Virginia. It was of little more service than as it initiated the parties into the method of such proceedings.

In the middle of July, 1684, Lord Howard, governor of Virginia, summoned a council of the sachems of the Five Nations to Albany. He was attended by two of his council and by Governor Dongan of New York and some of the magistrates of Albany. Howard charged upon the savages the butcheries and plunderings which they had committed seven years previous in Virginia and Maryland, "belonging to the great king of England." He told the sachems that the English had intended at once to avenge those outrages, but through the advice of Sir Edmund Andros then governor-general of the country, had sent peaceful messengers to them. The sachems had proved perfidious to the pledges they then gave and the governor, after threatening them, demanded from them conditions of future amity. After their usual fashion of shifting responsibility and professions of regret and future fidelity, the sachems renewed their covenants. Under the prompting of Governor Dongan they asked that the Duke of York's arms should be placed on the Mohawk castles, as a protection against their enemies, the French. Doubtless the Indians, in desiring or perhaps only assenting to, the affixing of these English insignia to their strongholds, might have had in view only the effect of them in warning off the French. They certainly did not realize that their English guests would ever afterwards, as they did, regard this concession of the tribes as an avowal of allegiance to the king of Great Britain, and as adopting for themselves the relation of subjects of a foreign monarch.

The experience gained by many previous attempts to secure the fidelity of the tribes, thenceforward known as the Six Nations by the incorporation into the confederacy of the remnant of the Tuscaroras, was put to service in three succeeding councils for treaty-making, held respectively at Philadelphia in 1742, in Lancaster, Pa., in 1744,[1] and at Albany in 1746.[2] Much allowance is doubtless to be made in the conduct of the earlier treaties for the lack of competent and faithful interpreters in councils made up of representatives of several tribes, with different languages and idioms. Interpreters have by no means always proved trustworthy, even when qualified for their office.[3] The difficulty was early experienced of putting into our simple mother-tongue the real substance of an Indian harangue, which was embarrassed and expanded by images and flowers of native rhetoric, wrought from the structure of their symbolic language, but adding nothing to the terms or import of the address. It was observed that often an interpreter, anxious only to state the gist of the matter in hand, would render in a single English sentence an elaborately ornate speech of an orator that had extended through many minutes in its utterance. The orator might naturally mistrust whether full justice had been done to his plea or argument. There is by no means a unanimity in the opinions or the judgments of those of equal intelligence, who have reported to us the harangues of Indians in councils, as to the qualities of their eloquence or rhetoric. The entire lack of terms for the expression of abstract ideas compelled them to draw their illustrations from natural objects and relations. Signs and gestures made up a large part of the significance of a discourse. Doubtless the cases were frequent in which the representation of a tribe in a council was made through so few of its members that there might be reasonable grounds for objection on the part of a majority to the terms of any covenant or treaty that had been made by a chief or an orator. Of one very convenient and plausible subterfuge, or honest plea, — whichever in any given case it might have been, — our native tribes have always been skilful in availing themselves. The assumption was that the elder, the graver, wiser representatives of a tribe were those who appeared on its behalf at a council. When circumstances afterwards led the whites to complain of a breach of the conditions agreed on, the blame was always laid by the chiefs on their "young men," whom they had been unable to restrain.

During the long term of intermittent warfare of the French and English on this continent, with native tribes respectively for their foes or allies, the conditions of the conflict, as before hinted, were in general but slightly affected by the alternative of peace or war as existing at any time between their sovereigns and people in Europe. Some of the fiercest episodes of the struggle on this soil took place during the intervals of truce, armistice, and temporary treaty settlements between the leading powers in the old world. When, in the treaties closing a series of campaigns, the settlement in the articles of peace included a restoration of the territory which had been obtained by either party by conquest, no permanent result was really secured. These restitutions were always subject to reclamation. Valuable and strategic points of territory merely changed hands for the time being; Acadia, for example, being seven times tossed as a shuttlecock between the parties to the settlement. The trial had to be renewed and repeated till the decision was of such a sort as to give promise of finality. The prize contended for here was really the mastery of the whole continent, though the largeness of the stake was not appreciated till the closing years of the struggle. Indeed, the breadth and compass of the field were then unknown quantities. Those closing years of stratagem and carnage in our forests correspond to what is known in history as the "Seven Years' War" in Europe, in which France, as a contestant, was worsted in the other quarters of the globe, as in this. Clive broke her power in India, as the generals of Britain discomfited her here. The French, in 1758, held a profitable mercantile settlement on five hundred miles of coast in Africa, between Cape Blanco and the river Gambia. It is one of the curious contrarieties in the workings of the same avowed principles under different conditions, that just at the time that the pacific policy of the Pennsylvania Quakers forbade their offering aid to their countrymen under the bloody work going on upon their frontiers, an eminent English Quaker merchant, Thomas Cumming, framed the successful scheme of conquest over this French settlement in Africa.[1]

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[1] By the treaty at Lancaster, the Indians covenanted to cede to the English, for goods of the money value of £400, the lands between the Alleghanies and the Ohio. [See our Vol. V. 566. — Ed.]

[2] These treaties are fully presented, with all the harangues, by Colden, vol. ii.

[3] The most capable and intelligent interpreter employed by the English for a long period, and who served at the councils for negotiating the most important treaties of this time, was Conrad Weiser. He came with his family from Germany in 1710, and settled at Schoharie, N. Y. His ability and integrity won him the confidence alike of the Indians and the English. In the *Collections of the Historical Society of Pennsylvania*, vol. i. pp. 1–34, are autobiographical, personal, and narrative papers and journals by this remarkable man, equally characterized by the boldest spirit of adventure and by an ardent piety. He gives in full his journal of his mission from the governments of Pennsylvania and Virginia to negotiate with the Six Nations in 1737. [See Vol. V. 566. — Ed.]

The treaty of Aix-la-Chapelle, in 1748, seemed to promise a breathing-time in the strife between the French and English here. In fact, however, so far from there being even a smouldering of the embers on our soil, that date marks the kindling of the conflagration which, continuing to blaze for fifteen years onward, comprehended all the decisive campaigns. The earliest of these were ominous and disheartening to the English, but they closed with the fullness of triumph. We must trace with conciseness the more prominent acts and incidents in which the natives, with the French and English, protracted and closed the strife.

When Europeans entered upon the region now known as Pennsylvania, though its well-watered and fertile territory and its abounding game would seem to have well adapted it to the uses of savage life, it does not appear that it was populously occupied. The Delawares, which had held it at an earlier period, had, previously to the coming of the whites, been subjugated by the more warlike tribes of the Five Nations, or Iroquois. Some of the vanquished had passed to the south or west, to be merged in other bands of he natives. Such of them as remained in their old haunts were humiliated by their masters, despised as "women," and denied the privileges of war-iors. While the Five Nations were thus potent in the upper portion of Pennsylvania, around the sources of the Susquehanna, its southern region was held by the Shawanees. The first purchase near the upper region made by Europeans of the natives was by a colony of Swedes, under Gov-ernor John Printz, in 1643. This colony was subdued, though allowed to remain on its lands, by the Dutch, in 1655. In 1664, the English took possession of all Pennsylvania, and of everything that had been held by the Dutch. Penn founded his province in 1682, by grant from Charles II, and in the next year made his much-lauded treaty of peace and purchase with the Indians for lands west and north of his city. The attractions of he province, and the easy opening of its privileges to others than the Friends, drew to it a rapid and enterprising immigration. In 1729 there came in, principally from the north of Ireland, 6,207 settlers. In 1750 here arrived 4,317 Germans and 1,000 English. The population of the province in 1769 was estimated at 250,000. The Irish settlers were mostly Presbyterians, the Germans largely Moravians. It soon appeared, espe-cially when the ravages of the Indians on the frontiers were most exasper-ating and disastrous, that there were elements of bitter discord between hese secondary parties in the province and the Friends who represented he proprietary right. And this suggests a brief reference to the fact that, as a very effective agent entering into the imbittered conflicts of the time and scene, we are to take into the account some strong religious animosities. The entailed passions and hates of the peoples of the old world, as Catholics and Protestants, and even of sects among the latter, were transferred here to nflame the rage of combatants in wilderness warfare.[1] The zeal and heroic idelity of the French priests in making a Christian from a baptized and untamed savage had realized, under rude yet easy conditions, a degree of success. In and near the mission stations, groups of the natives had been rained to gather around the cross, and to engage with more or less re-sponse in the holy rites. Some of them could repeat, after a fashion, the Pater Noster, the Ave Maria, and the Creed. Some had substituted a crucifix or a consecrated medal for their old pagan charm, to be worn on he breast. When about to go forth on the war-path, their priests would give them shrift and benediction. But, as has been said, it was no part or purpose of this work of christianizing savages to impair their qualities as warriors, to dull their knives or tomahawks, to quench their thirst for blood, or to restrain the fiercest atrocities and barbarities of the fight or the vic-ory. On the well-known experience that fresh converts are always the most ardent haters of heresy, these savage neophytes were initiated into some of the mysteries of the doctrinal strife between the creed of their priests and the abominated infidelity and impiety of the English Protestants. Some of the savages were by no means slow to learn the lesson. Mr. Parkman's brilliant and graphic pages afford us abounding illustrations of the part which priestly instructions and influence had in adding to savage ferocity the simulation of religious hate for heresy. With whatever degree of understanding or appreciation of the duty as it quickened the courage or the ferocity of the savage, there were many scenes and occasions in which the warrior added the charge of heretic to that of enemy, when he dealt his blow.[1]

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[1] Mahon's *England*, ch. 35, and Smollett's *England*, Book iii. ch. 9.

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[1] Governor Dinwiddie, in urging the assembly of Virginia, in 1756, to active war measures, warned them of the alternative of "giving up your Liberty for Slavery, the purest Religion for he grossest Idolatry and Superstition, the legal and mild Government of a Protestant King for the Arbitrary Exactions and heavy Oppressions of a Popish Tyrant." (*Dinwiddie Papers*, ii. p. 515.)

Almost as violent and exasperating were the animosities engendered between the disciples of different Protestant fellowships. The Quakers, backed by proprietary rights, by the prestige of an original peace policy and friendly negotiations with the Indians, and for the most part secure and unharmed in the centralized homes of Philadelphia and its neighborhood, imagined that they might refuse all participation in the bloody work enacting on their frontiers. The adventurous settlers on the borders were largely Presbyterians. The course of non-interference by the Quakers, who controlled the legislature, seemed to those who were bearing the brunt of savage warfare monstrously selfish and inhuman. There was a fatuity in this course which had to be abandoned. When a mob of survivors from the ravaged fields and cabins of the frontiers, bringing in cartloads of the bones gathered from the ashes of their burned dwellings, thus enforced their remonstrances against the peace policy of the legislature, the Quakers were compelled to yield, and to furnish the supplies of war.[2] But sectarian hatred hardly ever reached an intenser glow than that exhibited between the Pennsylvania Quakers and Presbyterians. Meanwhile, the mild and kindly missionary efforts of the Moravians, in the same neighborhood, were cruelly baffled. Their aim was exactly the opposite of that which guided the Jesuit priests. They sought first to make their converts human beings, planters of the soil, taught in various handicrafts, and weaned from the taste of war and blood.

When the frontier war was at its wildest pitch of havoc and fury, the Moravian settlements, which had reached a stage giving such promise of success as to satisfy the gentle and earnest spirit of the missionaries who had planted them, were made to bear the brunt of the rage of all the parties engaged in the deadly turmoil. The natives timidly nestling in thei settlements were regarded as an emasculated flock of nurslings, mean and cowardly, lacking equally the manhood of the savage and the pride and capacity of the civilized man. Worse than this, their pretended desire to preserve a neutrality and to have no part in the broil was made the ground of a suspicion, at once acted upon as if fully warranted, that they were really spies, offering secret information and even covert help as guides and prompters in the work of desolation among the scattered cabins of the whites. So a maddened spirit of distrust, inflamed by false rumors and direct charges of complicity, brought upon the Moravian settlers the hate and fury of the leading parties in the conflict.[1]

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[1] In Mr. Parkman's *Montcalm and Wolfe*, i. p. 65 and on, is a lively account of the busy zeal of Father Piquet in making and putting to service savage converts of the sort described in the text. [See Vol. V. 571. — Ed.]

[2] The excellent James Logan, who came over as secretary to William Penn, and who always claimed to be a consistent member of the Society of Friends, took an exception to a position on one point, — that of maintaining the right, and even obligation, of defensive warfare. A letter o very cogent argument to this effect was addressed by him to the Society of Friends in 1741, remon strating with them for their opposition in the legislature to means for defending the colony *Collections of Historl. Soc. of Penns.*, i. p. 36. [See Vol. V. p. 243. — Ed.]

It is noteworthy that the most furious havoc of savage warfare should have been wreaked on the frontiers of Pennsylvania, the one of all the English colonies in America whose boast was, and is, that there alone the entrance of civilized men upon the domains of barbarism was marked and initiated by the Christian policy of peace and righteousness. Penn and his representatives claimed that they had twice paid the purchase price of the lands covered by the proprietary charter to the Indian occupants of them, — once to the Delawares residing upon them, and again to the Iroquois who held them by conquest. The famous "Walking Purchase," whether a fair or a fraudulent transaction, was intended to follow the original policy of the founder of the province.[2]

In the inroads made upon the English settlements by Frontenac and his red allies, New York and New England furnished the victims. The middle colonies, so far as then undertaken, escaped the fray. Trouble began for them in 1716, when the French acted upon their resolve to occupy the valley of the Ohio. The Ohio Land Company was formed in 1748 to advance settlements beyond the Alleghanies, and surveys were made as far as Louisville. This enterprise roused anew the Indians and the French. The latter redoubled their zeal in 1753 and onward, south of Lake Erie and on the branches of the Ohio. The English found that their delay and dilatoriness in measures for fortifying the frontiers had given the French an advantage which was to be recovered only with increased cost and enterprise. In an earlier movement, had the English engaged their efforts when it was first proposed to them, they might have lessened, at least, their subsequent discomfiture. Governor Spotswood, of Virginia, in 1720 had urged on the British government the erection of a chain of posts beyond the Alleghanies, from the lakes to the Mississippi. But his urgency had been ineffectual. The governor reported that there were then "Seven Tributary Tribes" in Virginia, being seven hundred in number, with two hundred and fifty fighting-men, all of whom were peaceful. His only trouble was from the Tuscaroras on the borders of Carolina.[1]

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[1] It was but a repetition of the passions and jealousies of the colonists of Massachusetts, as maddened by the devastation inflicted upon them in King Philip's war, when they themselves broke up the settlements, then under hopeful promise, of "Praying Indians," at Natick and other villages, the fruits of the devoted labors of the Apostle Eliot. The occasion of this dispersion and severe watch over the Indian converts was a jealousy that they had been warmed in the bosom of a weak pity merely for a deadly use of their fangs.

[2] [See Vol. V. 240. — Ed.]

The erection of Fort Duquesne may be regarded as opening the decisive struggle between the French and the English in America, which reached its height in 1755, and centred around the imperfect chain of stockades and blockhouses on the line of the frontiers then reached by the English pioneers.

About the middle of the eighteenth century the number of French subjects in America, including Acadia, Canada, and Louisiana, was estimated at about eighty thousand. The subjects of England were estimated at about twelve hundred thousand. But, as before remarked, this vast disparity of numbers by no means represented an equal difference in the effectiveness of the two nationalities in the conduct of military movements. The French were centralized in command. They had unity of purpose and in action. In most cases they held actual defensive positions at points which the English had to reach by difficult approaches; and more than all, till it became evident that France was to lose the game, the French received much the larger share of aid from the Indians. Pennsylvania and Virginia were embarrassed in any attempt for united defensive operations on the frontiers by their own rival claims to the Ohio Valley. The English, however, welcomed the first signs of vacillation in the savages. When Céloron, in 1749, had sent messengers to the Indians beyond the Alleghanies to prepare for the measures he was about to take to secure a firm foothold there, he reported that the natives were "devoted entirely to the English." This might have seemed true of the Delawares and Shawanees, though soon afterwards these were found to be in the interest of the French. In fact, all the tribes, except the Five Nations, may be regarded as more or less available for French service up to the final extinction of their power on the continent. Indeed, as we shall see, the mischievous enmity of the natives against the English was never more vengeful than when it was goaded on by secret French agency after France had by treaty yielded her claims on this soil. Nor could even the presumed neutrality of the Five Nations be relied upon by the English, as there were reasons for believing that many among them acted as spies and conveyed intelligence. Till after the year 1754 so effective had been the activity of the French in planting their strongholds and winning over the savages that there was not a single English post west of the Alleghanies.

At the same critical stage of this European rivalry in military operations, the greed for the profits of the fur trade was at its highest pitch. The beavers, as well as the red men, should be regarded as essential parties to the struggle between the French and the English. The latter had cut very deep into the trade which had formerly accrued wholly to the French at Oswego, Toronto, and Niagara.

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[1] *Spotswood Papers*, published by the Virginia Historical Society. [The events of this period are followed in our Vol. V. — Ed.]

Up to the year 1720 there had come to be established a mercantile usage which had proved to be very prejudicial to the English, alike in their Indian trade and in their influence over the Indians. The French had been allowed to import goods into New York to be used for their Indian trade. Of course this proved a very profitable business, as it facilitated their operations and was constantly extending over a wider reach their friendly relations with the farther tribes. Trade with Europe and the West Indies and Canada could be maintained only by single voyages in a year, through the perilous navigation of the St. Lawrence. With the English ports on the Atlantic, voyages could be made twice or thrice a year. A few merchants in New York, having a monopoly of supplying goods to the French in Canada, with their principals in England, had found their business very profitable. Goods of prime value, especially "strouds," a kind of coarse woollen cloth highly prized by the Indians, were made in and exported from England much more cheaply than from France. The mischief of this method of trade being realized, an act was passed by the Assembly in New York, in 1720, which prohibited the selling of Indian goods to the French under severe penalties, in order to the encouragement of trade in general, and to the extension of the influence of the English over the Indians to counterbalance that of the French. Some merchants in London, just referred to, petitioned the king against the ratification of this act. By order in council the king referred the petition to the Lords of Trade and Plantations. A hearing, with testimonies, followed, in which those interested in the monopoly made many statements, ignorant or false, as to the geography of the country, and the method and effects of the advantage put into the hands of the French. But the remonstrants failed to prevent the restricting measure. From that time New York vastly extended its trade and intercourse with the tribes near and distant, greatly to the injury of the French.[1]

The first white man's dwelling in Ohio was that of the Moravian missionary, Christian Frederic Post.[2] He was a sagacious and able man, and had acquired great influence over the Indians, which he used in conciliatory ways, winning their respect and confidence by the boldness with which he ventured to trust himself in their villages and lodges, as if he were under some magical protection. He went on his first journey to the Ohio in 1758, by request of the government of Pennsylvania, on a mission to the Delawares, Shawanees, and Mingoes. These had once been friendly to the English, but having been won over by the French, the object was to regain their confidence. The tribes had at this time come to understand, in a thoroughly practical way, that they were restricted to certain limited conditions so far as they were parties to the fierce rivalry between the Europeans. The issue was no longer an open one as to their being able to reclaim their territory for their own uses by driving off all these pale-faced trespassers. It was for them merely to choose whether they would henceforward have the French or the English for neighbors, and, if it must be so, for masters. Nor were they left with freedom or power to make a deliberate choice. But Post certainly stretched a point when he told the Indians that the English did not wish to occupy their lands, but only to drive off the French.

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[1] The official papers are given in full by Colden, who adds a very able memorial of his own, in favor of the act, addressed to Governor Burnet, in 1724. It was estimated that the Indian trade of New York increased fivefold in twelve years.

[2] [See Vol. V. 530, 575. — ED.]

As Governor Spotswood, in the interest of Virginia, had attempted, in 1716, to break the French line of occupation by promoting settlements in the west, Governor Keith, of Pennsylvania, followed with a similar effort in 1719. Both efforts could be only temporarily withstood, and if baffled at one point were renewed at another. The English always showed a tenacity in clinging to an advance once made, and were inclined to change it only for a further advance. Though Fort Duquesne was blown up when abandoned by the French, with the hope of rendering it useless to the English, the post was too commanding a one to be neglected. After it had been taken by General Forbes in November, 1758, and had been strongly reconstructed by General Stanwix, though it was then two hundred miles distant from the nearest settlement, the possession of it was to a great extent the deciding fact of the advancing struggle. Colonel Armstrong had taken the Indian town of Kittanning in 1756.

The treaty negotiations between English and French diplomates at a foreign court, in 1763, which covenanted for the surrender of all territory east of the Mississippi and of all the fortified posts on lake and river to Great Britain, was but a contract on paper, which was very long in finding its full ratification among the parties alone interested in the result here. There were still three of these parties: the Indians; the French, who were in possession of the strongholds in the north and west; and the English colonists, supported by what was left of the British military forces, skeleton regiments and invalided soldiers, who were to avail themselves of their acquired domain. During the bloody and direful war which had thus been closed, the Indians had come to regard themselves as holding the balance of power between the French and the English. Often did the abler savage warriors express alike their wonder and their rage that those foreign intruders should choose these wild regions for the trial of their fighting powers. "Why do you not settle your fierce quarrels in your own land, or at least upon the sea, instead of involving us and our forests in your rivalry?" was the question to the officers and the file of the European forces. Though the natives soon came to realize that they would be the losers, whichever of the two foreign parties should prevail, their preferences were doubtless on the side of the French; and by force of circumstances easily explicable, after the English power, imperial and provincial, had obtained the mastery of the territory, the sympathies and aid of the natives went with the British during the rebellion of the colonies. But efore this result was reached England won its ascendency at a heavy acrifice of men and money, in a series of campaigns under many different enerals. The general peace between England, France, and Spain, secured y the treaty of 1763, and involving the cession of all American territory ast of the Mississippi by France to Britain, was naturally expected to ring a close to savage warfare against the colonists. The result was quite he contrary, inasmuch as the sharpest and most desolating havoc was vrought by that foe after the English were nominally left alone to meet he encounter. The explanation of this fact was that the French, though y covenant withdrawn from the field, were, hardly even with a pretence f secrecy, perpetuating and even extending their influence over their ormer wild allies in embarrassing and thwarting all the schemes of the nglish for turning their conquests to account. General Amherst was eft in command here with only enfeebled fragments of regiments and vith slender ranks of provincials. The military duty of the hour was for he conquerors to take formal possession of all the outposts still held by rench garrisons, announcing to those in command the absolute conditions f the treaty, and to substitute the English for the French colors, henceorward to wave over them. This humiliating necessity was in itself rievous enough, as it forced upon the commanders of posts which had ot then been reached by the war in Canada, a condition against which no emonstrance would avail. But beyond that, it furnished the occasion for he most formidable savage conspiracy ever formed on this continent, ooking to the complete extinction of the English settlements here. The rench in those extreme western posts had been most successful in securng the attachment of the neighboring Indian tribes, and found strong ympathizers among them in their discomfiture. At the same time those ribes had the most bitter hostility towards the English with whom they ad come in contact. They complained that the English treated them vith contempt and haughtiness, being niggard of their presents and sharp n their trade. They regarded each advanced English settlement on their ands, if only that of a solitary trader, as the germ of a permanent colony. Jnder these circumstances, the French still holding the posts, waiting only he exasperating summons to yield them up, found the temptation strong nd easy of indulgence to inflame their recent allies, and now their sympahizing friends, among the tribes, with an imbittered rage against their new nasters. Artifice and deception were availed of to reinforce the passions f savage breasts. The French sought to relieve the astounded釘consternaion of their red friends on finding that they were compelled to yield the ield to the subjects of the English monarch, by beguiling them with the ancy that the concession was but a temporary one, very soon to be set side by a new turn in the wheel of fortune. Their French father had nly fallen asleep while his English enemies had been impudently trespassng upon the lands of his red children. He would soon rouse himself to venge the insult, and would reclaim what he had thus lost. Indeed, on the principle that the size and ornamentings of a lie involved no additional wrong in the telling it, the Indians were informed that a French army was even then preparing to ascend the Mississippi with full force, before which the English would be crushed.

There was then in the tribe of Ottawas, settled near Detroit, a master spirit, who, as a man and as a chief, was the most sagacious, eloquent, bold, and every way gifted of his race that has ever risen before the white man on this continent to contest in the hopeless struggle of barbarism with civilization. That Pontiac was crafty, unscrupulous, relentless, finding a revel in havoc and carnage, might disqualify him for the noblest epithets which the white man bestows on the virtues of a military hero. But he had the virtues of a savage, all of them, and in their highest range of nature and of faculty. He was a stern philosopher and moralist also, of the type engendered by free forest life, unsophisticated and trained in the school of the wilderness. He knew well the attractions of civilization. He weighed and compared them, as they presented themselves before his eyes in full contrast with savagery, in the European and in the Indian, and in those dubious specimens of humanity in which the line of distinction was blurred by the Indianized white man, the "Christian" convert, and the half-breed. Deliberately and, we may say, intelligently, he preferred for his own people the state of savagery. Intelligently, because he gave grounds for his preference, which, from his point of view and experience, had weight in themselves, and cannot be denied something more than plausibility even in the judgment of civilized men, for idealists like Rousseau and the Abbé Raynal have pleaded for them. Pontiac was older in native sagacity and shrewdness than in years. He had evidence enough that his race had suffered only harm from intercourse with the whites. The manners and temptations of civilization had affected them only by demoralizing influences. All the elements of life in the white man struck at what was noblest in the nature of the Indian, — his virility, his self-respect, his proud and sufficing independence, his content with his former surroundings and range of life. With an earnest eloquence Pontiac, in the lodges and at the council fires of his people, whether of his own immediate tribe or of representative warriors of other tribes, set before them the demonstration that security and happiness, if not peace, depended for them on their renouncing all reliance upon the white man's ways and goods, and reverting with a stern stoicism to the former conditions of their lot. He told his responsive listeners that the Great Spirit, in pouring the wide salt waters between the two races of his children, meant to divide them and to keep them forever apart, giving to each of them a country which was their own, where they were free to live after their own method. The different tinting of their skin indicated a variance which testified to a rooted divergence of nature. For his red children the Great Spirit had provided the forest, the meadow, the lake, and the river, with fish and game for food and clothing. The canoe, the moccasin, the snow-shoe, the stone axe, the hide or bark covered lodge, the fields of golden maize, the root crops, the vines and berries, the waters of the cold crystal spring, made the inventory of their possessions. They belonged to nature, and were of kin to all its other creatures, which they put freely to their use, holding everything in common. The changing moons brought round the seasons for planting and hunting, for game, festivity, and religious rite. Their old men preserved the sacred traditions of their race. Their braves wore the scars and trophies of a noble manhood, and their young men were in training to be the warriors of their tribes in defence or conquest.

These, argued Pontiac, were the heritage which the Great Spirit had assigned to his red children. The spoiler had come among them from across the salt sea, and woe and ruin for the Indian had come with him. The white man could scorn the children of the forest, but could not be their friend or helper. Let the Indian be content and proud to remain an Indian. Let him at once renounce all use of the white man's goods and implements and his fire-water, and fall back upon the independence of nature, fed on the flesh and clothed with the skins secured by bow and arrow and his skill of woodcraft.

Such was the pleading of the most gifted chieftain and the wisest patriot, the native product of the American wilderness. There was a nobleness in him, even a grandeur and prescience of soul, which take a place now on the list of protests that have poured from human breasts against the decrees of fate. Pontiac followed up his bold scheme by all the arts and appliances of forest diplomacy. He formed his cabinet, and sent out his ambassadors with their credentials in the reddened hatchet and the war-belt. They visited some of even the remoter tribes, with appeals conciliatory of all minor feuds and quarrels. Their success was qualified only by the inveteracy of existing enmities among some of these tribes. It would be difficult to estimate, even if only approximately, the number of the savages who were more or less directly engaged in the conspiracy of Pontiac. A noted French trader, who had resided many years among the Indians, and who had had an extended intercourse with the tribes, stayed at Detroit during the siege, having taken the oath of allegiance to the king of Great Britain. Largely from his own personal knowledge, he drew up an elaborate list of the tribes, with the number of warriors in each. The summing up of these is 56,500. In the usual way of allowing one to five of a whole population for able-bodied men, this would represent the number of the savages as about 283,000, which slightly exceeds the number of Indians now in our national domain.[1]

The lake and river posts which had been yielded up by the French, on the summons, were occupied by slender and poorly supplied English garrisons, unwarned of the impending concentration. The scheme of Pontiac involved two leading acts in the drama: one was the beleaguerment of all the fortified lake and river garrisons; the other was an extermination by fire and carnage of all the isolated frontier settlements at harvest time, so as to cause general starvation. The plan was that all these assaults, respectively assigned to bodies of the allies, should be made at the same time, fixed by a phase of the moon. Scattered through the wilderness were many English traders, in their cabins and with their packhorses and goods. These were plundered and massacred.[1] The assailed posts were slightly reinforced by the few surviving settlers and traders who escaped the open field slaughter. The conspiracy was so far effective as to paralyze with dismay the occupants of the whole region which it threatened. But pluck and endurance proved equal to the appalling conflict. Nearly all the posts, after various alternations of experience, succumbed to the savage foe. Such was the fate of Venango, Le Bœuf, Presqu' Isle, La Bay, St. Joseph, Miamis, Ouachtanon, Sandusky, and Michilimackinac. Detroit alone held out. The fort at Niagara, being very strong, was not attacked. The Shawanees and Delawares were active agents in this conspiracy. The English used all their efforts and appliances to keep the Six Nations neutral. The French near the Mississippi were active in plying and helping the tribes within their reach. The last French flag that came down on our territory was at Fort Chartres on the Mississippi.[2]

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[1] Appendix V to the *Ohio Valley Historical Series*, edition of *Bouquet's Expedition* (Cincinnati, 1868).

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[1] It is estimated that not less than two hundred of these scattered traders, who had confidently ventured into the wilderness on the assurance of the treaty, were massacred, after being plundered of goods of more than a hundred thousand pounds in value.

[2] [The events of the Pontiac war can be followed in Vol. V. — ED.]

CRITICAL ESSAY ON THE SOURCES OF INFORMATION.[1]

By Dr. Ellis and the Editor.

ON some few historical subjects we have volumes so felicitously constructed as to combine all that is most desirable in original materials with a judicious digest of them. Of such a character is Francis Parkman's *France and England in North America, A Series of Historical Narratives.* So abundant, authentic, and intelligently gathered are his citations from and references to the journals, letters, official reports, and documents, often in the very words of the actors, that, through the writer's luminous pages, we are, for all substantial purposes, made to read and listen to their own narrations. Indeed, we are even more favored than that. So comprehensive have been his researches, and so full and many-sided are the materials which he has digested for us, that we have all the benefit of an attendance on a trial in a court or a debate in the forum, where by testimony and cross-examination different witnesses are made to verify or rectify their separate assertions. The official representatives of France, military and civil, on this continent, like their superiors and patrons at home, were by no means all of one mind. They had their conflicting interests to serve. They made their reports to those to whom they were responsible or sought to influence, and so colored them by their selfishness or rivalry. These communications, gathered from widely scattered repositories, are for the first time brought together and made to confront each other in Mr. Parkman's pages. Allowing for a gap covering the first half of the eighteenth century, which is yet to be filled, Mr. Parkman's series of volumes deals with the whole period of the enterprise of France in the new world to its cession of all territory east of the Mississippi to Great Britain. His marvellously faithful and skilful reproduction of the scenic features of the continent, in its wild state, bears a fit relation to his elaborate study of its red denizens. His wide and arduous exploration in the tracks of the first pioneers, and his easy social relations with the modern representatives of the aboriginal stock, put him back into the scenes and companionship of those whose schemes and achievements he was to trace historically. After identifying localities and lines of exploration here, he followed up in foreign archives the missives written in these forests, and the official and confidential communications of the military and civic functionaries of France, revealing the joint or conflicting schemes and jealousies of intrigue or selfishness of priests, traders, monopolists, and adventurers. The panorama that is unrolled and spread before us is full and complete, lacking nothing of reality in nature or humanity, in color, variety, or action. The volumes rehearse in a continuous narrative the course of French enterprise here, the motives, immediate and ultimate, which were had in view, the progress in realizing them, the obstacles and resistance encountered, and the tragic failure.[1]

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[1] The bibliography of the subject is nowhere exhaustively done. The *Proof-sheets* of Pilling as a tentative effort, and his later divisionary sections, devoted to the Eskimo, Siouan, and other stocks, though primarily framed for their linguistic bearing, are the chief help: and these guides can be supplemented by Field's Indian *Bibliography*, the references for anonymous books in Sabin's *Dictionary* (ix. p. 86), and sections in many catalogues of public and private libraries, like the Brinley (iii. 5,352 etc.), devoted wholly or in part to Americana, and the foot-notes and authorities given in Parkman, H. H. Bancroft, and many others.

The references in Parkman show that he depends more upon French than upon English sources, and indeed he seems to give the chief credit for his drawing of the early Indian life and character to the *Relations* of the French and Italian Jesuits,[2] during their missionary work in New France.

We must class with these records of the Jesuits, though not equalling them in value, the volumes of Champlain, Sagard, Creuxius, Boucher,[3] and the later Lafitau and Charlevoix. Parkman[4] tells us that no other of these early books is so satisfactory as Lafitau's *Mœurs des Sauvages* (1724); and Charlevoix gave similar testimony regarding his predecessor.[5] For original material on the French side we have nothing to surpass in interest the *Mémoires et documents*, published by Pierre Margry, of which an account has been given elsewhere,[6] as well as of the efforts of Parkman and others in advancing their publication.[7] There is but little matter in these volumes relating to the military operations which make the subject of this chapter, though jealousy and rivalry of the schemes of the English, and the necessity of efforts to thwart them in their attempts to gain influence and to open trade with the Indians, are constantly recognized. In the diplomatic and military movements which opened on this continent the Seven Years' War, the English, who had substantially secured the alliance of the Iroquois, or the Six Nations, insisted that they had obtained by treaties with them the territory between the Alleghanies and the Ohio, which the Six Nations on their part claimed to have gained by conquest and cession of the tribes that had previously occupied it. But when the English vindicated their entrance on the territory on the basis of these treaties with the Six Nations, the Shawanees and the Delawares, having recuperated their courage and vigor, denied this right by conquest. The French could not claim a right either by conquest or by cession. Their assumed occupancy and tenure through mission stations and strongholds were maintained simply and wholly on grounds of discovery and exploration. Margry's volumes furnish the abundant and all-sufficient evidence of the priority of the French in this enterprise. The official documents interchanged with the authorities at home are all engaged with advice and promptings and measures for making good the claim to dominion founded on discovery. These volumes also are of the highest value as presenting to us from the first explorers, every way intelligent and competent as observers and reporters, the scenes and tenants of the interior of the continent. Here we have the wilderness, its primeval forests, its sea-like lakes, its threading rivers, shrunken or swollen, its cataracts and its confluent streams, its marshy expanses, bluffs, and plains, and its resources, abundant or scant, for sustaining life of beasts or men, all touched in feature or full portrayal by the charming skill of those to whom the sight was novel and bewildering.[1] These French explorers will henceforth serve for all time as primary authorities on the features and resources of the interior of this continent just before it became the prize in contest between rival European nationalities. That contest undoubtedly had more to do in deciding the fate of the savage tribes from that time to our own. There are many reasons for believing that if the French had been able to hold alone an undisputed dominion in the interior of the continent, their relations with the Indian tribes, if not wholly pacific, would have been far more amicable than those which followed upon the hot rivalry with the English for the possession of their territories. The French were the wiser, the more tolerant and friendly of the two, in their intercourse with and treatment of the savages, with whom they found it so easy to affiliate. Under other circumstances the Indians might have come to hold the relation of *wards* to the French in a sense far more applicable than that in which the term has been used by the government of the United States.

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[1] Parkman's merits as a historian are elsewhere recognized in the present history. See Vols. II., IV., and V. He first gave his summary of Indian character in the introductory chapter of his first historical book, his *Pontiac*. He later completed it in papers in the *North Amer. Rev.*, July, 1865, and July, 1866, and finally in the introduction to his *Jesuits*.

[2] This class of material, including the *Lettres Edifiantes*, has been examined in our Vol. IV. 292, 296, 316, etc. Cf. Shea's *Charlevoix*, i. 88; *Glorias del segundo siglo de la compañia de Jesus, 1646–1730* (Madrid, 1734).

Parkman calls Brébœuf the best observer among the Jesuits. On their missions see *Revue Canadienne*, Jan., 1888; *Dublin Review*, xii. (1869) 70; *Mag. Amer. Hist.*, iii. 250. Margry (vol. i.) has a "Mémoire" on the Recollects, 1614–1884. Cf. *Revue Canadienne*, by S. Lesage, Feb., 1867, p. 303. On the earlier Canadian missions see N. E. Dionne in *Nouvelles Soirées Canadiennes*, i. 399; *U. S. Catholic Monthly*, vii. 235, 518, 561; and the Abbé Verreau on the beginnings of the Church in Canada, in *Roy. Soc. Canada, Proc.*, ii. 63.

[3] See Vol. IV. 130, 290, 296, 298.

[4] *Jesuits*, p. liv.

[5] Shea's ed. Charlevoix, p. 91. See *post*, Vol. IV. 298.

[6] Cf. Vol. IV. p. 242.

[7] *U. S. Statutes at Large*, xvii. 513.

Of the early English material there is no dearth, but it hardly has the same stamp of authority. The story of the Moravian and other missions on the Protestant and English side has less of such invariable devotedness and success than is recorded in the general summaries of the Jesuit and Recollet missions, like Shea's *History of the Catholic Missions*, 1529–1854 (N. Y., 1855).[2] The *Indian Nations* of Heckewelder,[3] the service of the United Brethren, and the labors instituted by the Society for the Propagation of the Gospel,[4] are records not without significance; but they yield to the superior efficacy of the French.[5] Among the English administrative officers, the lead must doubtless be given to Sir William Johnson, for his personal influence over the Indian mind, winning their full confidence by fair and generous treatment of them, by a free hospitality, by assimilating with their habits even in his array, and by mastering their language. His deputy, Col. George Croghan, as interpreter and messenger, was kept busily employed in constant tramps through the woods, and in fearless errands to parties of vacillating or hostile tribes, to hold or win them to the English interest. The principal and the deputy, in this hazardous diplomacy, were specially qualified for their office by having mastered the gift and qualities of Indian oratory, by a familiarity with Indian character in its strength and weakness, and by endeavoring to keep faith with them, and to imitate the adroit methods of the French rather than the contemptuous hauteur of most of the English in intercourse with them.[6]

The reader will naturally go to the biographies of Johnson, Washington, and the other military leaders of their time, to those of a few civilians, like Franklin, and to the general histories of the French and Indian wars and of their separate campaigns, for much light upon the Indian in war; and these materials have been sufficiently explored in another volume of the present History.[7] These more general accounts are easily supplemented in the narratives of adventures and sufferings by a large class of persons who fell captive to the Indians, and lived to tell their tales.[8]

The earlier travellers, like P. E. Radisson,[9] Richard Falconer,[10] Le Beau,[11] and Jonathan

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[1] Parkman in his *La Salle* lets us into the feelings of that explorer. La Salle's account of the Indians is translated in the *Mag. Amer. Hist.*, Ap., 1878.

[2] Cf. *Travels of several learned missionaries of the Society of Jesus, translated from the French* (London, 1714).

[3] See Vol. V. 245, 582.

[4] See Vol. V. p. 169.

[5] Other missionary records are noticed in Vol. V. Brinton enlarges upon the traces of Indian degradation following upon all missionary efforts among them. *Amer. Hero Myths*, 206, 231.

[6] The careers of Johnson and Croghan are traced in Vol. V.

[7] Vol. V. *passim.*

[8] Such were the *Travels* of Alexander Henry, the *Sufferings* of Peter Williamson, and the long list of so-called "Captivities" (see Vol. V. 186, 490). Probably Mr. Samuel G. Drake was for many years the most assiduous promoter of this class of books. This compiler's sympathetic sentiment clearly affected his rhetoric and sometimes the accuracy of his statements. Cf. titles of his books in Pilling, Sabin, and Field. Cf. Drake's *Aboriginal Races of North America, revised by H. L. Williams* (N. Y., 1880).

[9] *Voyages: an account of his travels and experiences among the North American Indians, from 1652 to 1684. Transcribed from original manuscripts in the Bodleian Library and the British Museum. With historical illustrations and an introduction by G. D. Scull* (Boston, 1885), a publication of the Prince Society.

[10] *Voyages*, 2d ed., London, 1724.

[11] See Vol. IV. p. 299.

Carver,[1] not to name others; the later ones, like Prinz Maximilian;[2] the experiences of various army officers on the frontiers, like Randolph B. Marcy[3] and J. B. Fry,[4] — all such books fill in the picture in some of its details.

The early life in the Ohio Valley was particularly conducive to such auxiliary helps in this study, and we owe more of this kind of illustration to Joseph Doddridge[5] than to any other. He was a physician and a missionary of the Protestant Episcopal Church, and in both his professions a man highly esteemed. He was born in Maryland in 1769, and in his fourth year removed with his family to the western border of the line between Pennsylvania and Virginia. With abundant opportunities in his youth of familiarity with the rudest experiences of frontier life near hostile Indians, he was a keen observer, a skilful narrator, and a diligent gatherer-up of historical and traditional lore from the hardy and well-scarred pioneers. He had received a good academic and medical education, and was a keen student of nature as well as of humanity. His pages give us most vivid pictures of life under the stern and perilous conditions; not, however, without their fascinations, of forest haunts, of rude and scattered cabins, of domestic and social relations, of the resources of the heroic whites, and of the qualities of Indian warfare in the desperate struggle with the nvaders.[6]

Another early writer in this field was Dr. S. P. Hildreth of Ohio, who published his *Pioneer History* (Cincinnati, 1848) while some of the pioneers of the Northwest were still living, and the papers of some of them, like Col. George Morgan, could be put to service.[7] Dr. Hildreth, in his *Biographical and Historical Memoirs of the early Pioneer Settlers of Ohio* (Cincinnati, 1852), included a Memoir of Isaac Williams, who at the age of eighteen began a course of service and adventure in the Indian country, which was continued till its close at the age of eighty-four. When eighteen years of age he was employed by the government of Pennsylvania, being already a trained hunter, as a spy and ranger among the Indians. He served in this capacity in Braddock's campaign, and was a guard for the first convoy of provisions, on pack-horses, to Fort Duquesne, after its surrender to General Forbes in 1758. He was one of the first settlers on the Muskingum, after the peace made there with the Indians, in 1765, by Bouquet. His subsequent life was one of daring and heroic adventure on the frontiers.[8]

Passing to the more general works, the earliest treatment of the North American Indians, of more than local scope, was the work of James Adair, first published in 1775, a section of whose map, showing the position of the Indian tribes within the present United States at that time, is given elsewhere.[1] This *History of the American Indians* was later included by Kingsborough in *Antiquities of Mexico* (vol. viii. London, 1848).[2] At just about the same time (1777), Dr. Robertson, in his *America* (book iv.), gave a general survey, which probably represents the level of the best European knowledge at that time.

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[1] In 1766–68.

[2] *Reise in das Innere Nord Amerikas* (Coblenz, 1841); also in an English translation (London).

[3] *Border Reminiscences* (N. Y., 1872).

[4] *Army Sacrifices.*

[5] *Notes of the settlement and Indian wars of the western parts of Virginia and Pennsylvania*, 1763–1783. See Vol. V. p. 581.

[6] The question has often been discussed as to the origin of the title of "Indian summer," as applied to a beautiful portion of our autumnal season. Dr. Doddridge gives us an explanation of its original significance, or, at least, of an association with it, which would make a feeling of dread rather than of romance its most striking suggestion. He says that to a backwoodsman the term in its original import would cause a chill of horror. The explanation is as follows: The white settlers on the frontiers found no peace from Indian alarms and onsets save in the winter. From spring to the early part of the autumn, the settlers, cooped up in the forts, or ever at watch in their fields, had no security or comfort. The approach of winter was hailed as a ubilee in cabin and farm, with bustle and hilarity. But after the first set-in of winter aspects came a longer or shorter interval of warm, smoky, hazy weather, which would tempt the Indians — as if a brief return of summer — to renew their incursions on the frontiers. The season, then, was an "Indian summer" only for blood and mischief. So the spell of warm open weather, of melting snows, in the latter part of February — a premature spring — was a period of dread for the frontiersmen. It was called the "pawwawing days," as the Indians were then holding their incantations and councils for rehearsing for their spring war-parties.

[7] Cf. further on Hildreth and his books our Vol. VII. p. 536.

[8] There are notices of other books of this kind in Vols. V. and VII. of the present History. Particularly, may be mentioned Joseph Pritt's *Mirror of Olden Time* (Chambersburg, Va., 1848; 2d ed., Abingdon, Va., 1849), in which the most interesting portions are the personal narratives of such captives to the Indians as Col. James Smith, John M'Cullough, and others, the full credibility of which is vouched for by those who knew them as neighbors and associates. This class of narratives by men who for years, willingly or unwillngly, affiliated with their wild captors make very intelligible to us the fact that the whites are much more readily Indianized than are Indians led to conform to the ways of civilization. Cf. Archibald Loudon's *Selection of some of the most interesting narratives, of outrages, committed by the Indians, in their wars with the white people. Also, an account of their manners, customs, traditions, etc.* (Carlisle, 1808–11; Harrisburg, 1888).

It was not till well into the present century that much effort was made to summarize the scattered knowledge of explorers like Lewis and Clarke and of venturesome travellers. In 1819, we find where we might not expect it about as good an attempt to make a survey of the subject as was then attainable, in Ezekiel Sanford's *History of the United States before the Revolution*, — a book, however, which was pretty roundly condemned for its general inaccuracy by Nathan Hale in the *North American Review*. The next year the Rev. Jedediah Morse made *A report to the secretary of war, on Indian affairs, comprising a narrative of a tour in 1820, for ascertaining the actual state of the Indian tribes in our country* (New Haven, 1822), which is about the beginning of systematized knowledge, though the subject in its scientific aspects was too new for well-studied proportions. The *Report*, however, attracted attention and instigated other students. De Tocqueville, in 1835, took the Indian problem within his range.[3] Albert Gallatin printed, the next year, in the second volume of the *Archæologia Americana* (Cambridge, 1836), his *Synopsis of the Indian Tribes within the United States east of the Rocky Mountains;* and though his main purpose was to explain the linguistic differences, his introduction is still a valuable summary of the knowledge then existing.

There were at this time two well-directed efforts in progress to catch the features and life of the Indians as preserving their aboriginal traits. Between 1838 and 1844 Thomas L. McKenney and James Hall published at Philadelphia, in three volumes folio, their *History of the Indian tribes of North America, with biographical sketches of the principal chiefs. With 120 portrs. from the Indian gallery of the Department of war, at Washington*;[4] and in 1841 the public first got the fruits of George Catlin's wanderings among the Indians of the Northwest, in his *Letters and notes on the manners, customs and condition of the North American Indians, written during eight years' travel among the wildest tribes of Indians in North America, in 1832–39* (N. Y., 1841), in two volumes. The book went through various editions in this country and in London.[5] It was but the forerunner of various other books illustrative of his experience among the tribes; but it remains the most important.[6] The sufficient summary of all that Catlin did to elucidate the Indian character and life will be found in Thomas Donaldson's *George Catlin's Indian Gallery in the U. S. Nat. Museum, with memoirs and statistics*, being part v. of the *Smithsonian Report* for 1885.[7]

The great work of Schoolcraft has been elsewhere described in the present volume.[8]

The agencies for acquiring and disseminating knowledge respecting the condition, past and present, of the red race have been and are much the same as those which improve the study of the archæological aspects of their history: such publications as the *Transactions of the American Ethnological Society* (1845–1848); the *Reports* of the governmental geological surveys, and those upon transcontinental railway routes; those upon national boundaries; those of the

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[1] Vol. VII. p. 448. As types of successive ranges of anthropological studies see Happel's *Thesaurus Exoticorum* (Hamburg, 1688); Stuart and Kuyper's *De Mensch zoo als hij voorkomt* (Amsterdam, 1802), vol. vi., and the better known *Researches* of Prichard (vol. v.).

[2] See Vol. V. 68.

[3] See Vol. VII. 264.

[4] The original paintings for the plates are now in the Peabody Museum (*Report*, xvi. 189). M'Kenney also published his *Memoirs, official and personal, with sketches of travel among the northern and southern Indians* (N. Y., 1846), in two volumes. He had been in 1816 the agent of the United States in dealing with the Indians, and in 1824 had been put at the head of the Indian bureau.

[5] The English editions are generally called *Illustrations of the Manners*, etc.

[6] The best bibliographical record of Catlin's publications is in Pilling's *Bibliog. Siouan languages* (1887), p. 15. Cf. Field, p. 63; Sabin, iii. p. 436.

[7] The volume contains three interesting portraits of Catlin and reimpressions of his drawings as originally published.

[8] For diversity of opinions respecting it see Allibone's *Dictionary*. The modern scientific historian and ethnologist think in conjunction in giving it a low rank compared with what such a book should be. The fullest account of the bibliography of this and of Schoolcraft's other books is in Pilling's *Proof-sheets*. Whatever credit may accrue to Schoolcraft is kept out of sight in the title-page of a condensation of the book, which has some interspersed additions from other sources, all of which are obscurely included, so that the authorship of them is uncertain. The book is called *The Indian Tribes of the United States, edited by F. S. Drake* (Philad., 1884), in 2 vols. There is another conglomerate and useful book, edited by W. W. Beach, *The Indian Miscellany; papers on the history, antiquities* [*etc.*] *of the American aborigines* (Albany, 1877), which is a collection of magazine, review, and newspaper articles by various writers, usually of good character.

Smithsonian Institution, with its larger *Contributions*, and of late years the *Reports of the Bureau of Ethnology ;* the reports of such institutions as the Peabody Museum of Archæology; and those of the Indian agents of the Federal government, of chief importance among which is Miss Alice C. Fletcher's *Indian Education and Civilization*, published by the Bureau of Education (Washington, 1888). To these must be added the great mass of current periodical literature reached through *Poole's Index*, and the action and papers of the government, not always easily discoverable, through Poore's *Descriptive Catalogue.*

The maps of the seventeenth and eighteenth centuries are, in addition to the reports of traders, missionaries, and adventurers, the means which we have of placing the territories of the many Indian tribes which, since the contact of Europeans, have been found in North America ; but the abiding-places of the tribes have been far from permanent. Many of these early maps are given in other volumes of the present History.[1] Geographers like Hutchins and military men like Bouquet found it incumbent on them to study this question.[2] Benjamin Smith Barton surveyed the field in 1797; but the earliest of special map seems to have been that compiled by Albert Gallatin, who endeavored to place the tribes of the Atlantic slope as they were in 1600, and those beyond the Alleghanies as they were in 1800. The map in the *American Gazetteer* (London, 1762) gives some information,[3] and that of Adair in 1775 is reproduced elsewhere.[4] In 1833, Catlin endeavored to give a geographical position to all the tribes in the United States on a map, given in his great work and reproduced in the *Smithsonian Report*, part v. (1885). In 1840 compiled maps were given on a small scale in George Bancroft's third volume of his *United States*, and another in Marryat's *Travels*, vol. ii. The government has from time to time published maps showing the Indian occupation of territory, and the present reservations are shown on maps in Donaldson's *Public Domain* and in the *Smithsonian Report*, part v. (1885).[5]

The migrations and characteristics of the Eskimos have already been discussed,[6] and the journals of the Arctic explorers will yield light upon their later conditions. We find those of the Hudson Bay region depicted in all the books relating to the life of the Company's factors.[7] The Beothuks of Newfoundland, which are thought to have become extinct in 1828,[8] are described in Hatton and Harvey's *Newfoundland ;* by T. G. B. Lloyd in the *Journal of the Anthropological Institute* (London), 1874, p. 21 ; 1875, p. 222 ; by A. S. Gatschet in the *American Philosophical Society's Transactions* (Philad., 1885–86, vols. xxii. xxiii.) ; and in the *Nineteenth Century*, Dec., 1888. Leclercq in his *Nouvelle Relation de la Gaspésie* (Paris, 1691) gives us an account of the natives on the western side of the gulf.[9]

The Micmacs of Nova Scotia are considered in Lescarbot and the later histories and in the documentary collections of that colony; and as they played a part in the French wars, the range of that military history covers some material concerning them.[10]

For the aborigines of Canada, we easily revert to the older writers, like Champlain, Sagard, Creuxius, Boucher, Leclercq, Lafitau; the *Voyage curieux et nouveau parmi les sauvages* of Le Beau (Amsterdam, 1738); the *Nouvelle France* of Charlevoix; the *Histoire de l'Amérique Septentrionale* (Paris, 1753) of Bacqueville de la Potherie;[11] and to the later historians, like Fernald (ch. 7, 8), Garneau (2d book), and Warburton's *Conquest of Canada* (ch. 6, 7, 8). The Abenaki, which lay between the northeastern settlements of the English and the French, are specially treated by Bacqueville (vol. iv.), in the *Maine Hist. Soc. Collections*, vol. vi., and in Maurault's *Histoire des Abenakis* (1866).[1]

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[1] Particularly in Vol. IV.

[2] Cf. Vol. VI. 610, 611, 650.

[3] A part of it is reproduced by J. Watts de Peyster in his *Miscellanies by an Officer*, part ii. (N. Y., 1888).

[4] Vol. VII. p. 448.

[5] There is a map of the distribution of Indians in the eastern part of the United States in Cassino's *Standard Nat. Hist.*, vi. 147.

[6] See *ante*, p. 106.

[7] Paul Kane's *Wanderings of an artist among the Indians* is translated by Ed. Delessert in *Les Indiens de la baie d'Hudson* (Paris, 1861).

[8] The truth seems to be that some were last seen in that year. It is uncertain whether they died out, or the final remnant crossed into Labrador.

[9] See Vol. IV. p. 292.

[10] Cf. *Account of the customs and manners of the Micmakis and Maricheets savage nations. From an original French manuscript letter, never published. Annexed, pieces relative to the savages, Nova Scotia* [etc.] (London, 1758); J. G. Shea in *Hist. Mag.*, v. 290; *No. Am. Rev.*, vol. cxii., Jan., 1871. For missions among them see Vol. IV. p. 268.

[11] See Vol. IV. p. 299. The Hurons as the leading stock in Canada are, of course, to be studied in the *Jesuit Relations* and in all the other accounts of the Catholic missions in Canada, as well as in the early historical narratives, alluded to in the text, and in such special books as the Sieur Gendron's *Pays des Hurons* (see Vol. IV.·305), and in the accounts of leading missionaries like Jean de Brébœuf. Cf. Félix Martin's *Hurons et Iroquois* (Paris, 1877); J. M. Lemoine in *Maple Leaves*, 2d ser. (1873); Cayaron's *Chaumont*, 1639–1693, and his *Autobiographie et pièces inédites* (Poitiers, 1869); B. Sulte on the Iroquois and Algonquins

The rich descriptive literature of the early days of New England gives us much help in understanding the aboriginal life. We begin with John Smith, and come down through a long series of writers like Governor Bradford and Edward Winslow for Plymouth; Gorges, Morton, Winthrop, Higginson, Dudley, Johnson, Wood, Lechford, and Roger Williams for other parts. These are all characterized in another place.[2] The authorities on the early wars with the Pequots and with Philip, the accounts of Daniel Gookin, who knew them so well,[3] and chance visits like those of Rawson and Danforth,[4] furnish the concomitants needful to the recital. The story of the labors of Eliot, Mayhew, and others in urging the conversion of the natives is based upon another large range of material, in which much that is merely exhortative does not wholly conceal the material for the historian.[5] Here too the chief actors in this work help us in their records. We have letter of Eliot, and we have the tracts which he wa instrumental in publishing.[6] There is also a letter of Increase Mather to Leusden on the Indian missions (1688).[7] Gookin tells us of the sufferings of the Christian Indians during the war o 1675,[8] and he gives also reports of the speeche of the Indian converts.[9] The Mayhews of Martha's Vineyard, Thomas, Matthew, and Experience, have left us records equally useful.[10]

The principal student of the literature, mainl religious, produced in the tongue of the natives has been Dr. James Hammond Trumbull, o Hartford, and he has given us the leading accounts of its creation and influence.[11] It wa this propagandist movement that led Eleaze Wheelock into establishing (1754) an Indian Charity School at Lebanon, Connecticut, which finally removed to Hanover, in New Hampshire and became (1769) Dartmouth College.[12]

The New England tribes have produced considerable local illustrative literature. Th Kennebecs and Penobscots in Maine are noticed in the histories of that State, and in many of the local monographs.[13] For New Hampshire, beside the state histories,[14] the Pemigewassets are described in Wm. Little's *Warren*

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in the *Revue Canadienne* (x. 606); D. Wilson on the Huron-Iroquois of Canada in *Roy. Soc. Canada, Proc* (1884, vol. ii.), and references, *post*, Vol. IV. p. 307. W. H. Withrow has a paper on the last of the Hurons i the *Canadian Monthly* (ii. 409).

[1] All of these books are further characterized in Vols. IV. and V. Cf. also J. Campbell in the *Quebec Lit and Hist. Soc. Trans.*, 1881, and Wm. Clint in *Ibid.* 1877; and Daniel Wilson in *Am. Assoc. Adv. Sci. Proc* (1882), vol. xxxi., and in his *Prehist. Man*, ii. Also Vetromile's *Abnakis* (N. Y., 1866).

[2] Vol. III.

[3] "Hist. Coll. of the Indians of N. E." in *Mass. Hist. Soc. Coll.*, i.

[4] Noyes' *New England's Duty*, Boston, 1698.

[5] Cf. Neal's *New England*, i. ch. 6; *Conn. Evang. Mag.*, ii., iii., iv.; *Amer. Q. Reg.*, iv.; *Sabbath a Home*, Apr.–July, 1868.

[6] Cf. his letters in *Mass. Hist. Soc. Proc.*, Nov., 1879; *N. E. Hist. Gen. Reg.*, July, 1882; Birch's *Life o Robert Boyle;* and the lives of Eliot. For the Eliot tracts see our Vol. III. p. 355. Marvin's reprint of Eliot' *Brief Narration* (1670) has a list of writers on the subject. Cf. Martin Moore on Eliot and his Converts i the *Amer. Quart. Reg.*, Feb., 1843, reprinted in Beach's *Indian Miscellany*, p. 405; Ellis's *Red Man an White Man in No. America;* Jacob's *Praying Indians;* and Bigelow's *Natick.*

[7] Sabin, x. p. 191.

[8] *Archæologia Amer.*, ii.

[9] Cf. John Gillies' *Hist. Coll. relating to remarkable periods of the success of the Gospel* (Glasgow, 1754).

[10] *Success of the gospel among the Indians of Martha's Vineyard* (1694). *Conquests and Triumphs o Grace* (1696), which is reprinted in part in Mather's *Magnalia. Indian Converts of Martha's Vineyar* (1727), and Experience, its author, appended to one of his discourses a "State of the Indians, 1694–1720."

[11] *Origin and early progress of Indian missions in New England, with a list of books in the Indian language printed at Cambridge and Boston, 1653–1721* (Worcester, 1874, or *Amer. Antiq. Soc. Proc.*, Oct. 1873); a paper on the Indian tongue and its literature in the *Mem. Hist. Boston*, i. 465.

[12] Wheelock has given us *A brief narrative of the Indian Charity School* (London, 1766; 2d ed., 1767), an a series of tracts portray its later progress. Cf. McClure and Parish's *Memoir of Wheelock.* Samson Occun and Brant were his pupils. Also see Miss Fletcher's *Report*, p. 94, and S. C. Bartlett in *The Granit Monthly* (1888), p. 277.

[13] See Vol. III. p. 364. There is a bibliography of the Indians in Maine in the *Hist. Mag.*, March, 1870, p 164. Cf. Hanson's *Gardiner*, etc.; the histories of Norridgewock by Hanson and Allen; Sabine in the *Christian Examiner*, 1857; and *Mass. Hist. Soc. Coll.*, vols. iii., ix. On the Maine missions, see *post*, Vol. IV 300; and R. H. Sherwood in the *Catholic World*, xxii. 656.

[14] See Vol. III. p. 367.

(Concord, 1854), and the Pemicooks in the *N. H. Hist. Collections*, i.; Bouton's *Concord*, Moore's *Concord*, and Potter's *Manchester*.

The Archives of Massachusetts yield a large amount of material respecting the relations of the tribes to the government, particularly at the eastward, while Maine was a part of the colony;[1] and the large mass of its local histories, as well as those of the State,[2] supply even better than the other New England States material for the historian.[3]

The Indians of Rhode Island are noted by Arnold in his *Rhode Island* (ch. 3), and some special treatment is given to the Narragansetts and the Nyantics.[4] Those of Connecticut have a monographic record in De Forest's *Indians of Connecticut*, as well as treatment otherwise.[5]

Palfrey (*Hist. New England*, i. ch. 1, 2), in his general survey of the Indians of New England, delineates their character with much plainness and discrimination, and it is perhaps as true a piece of characterization as any we have.[6]

The Iroquois of New York have probably been the subject of a more sustained historical treatment than any other tribes. We have the advantage, in studying them, of the observations of the Dutch,[7] as well as of the French and English. The French priests give us the earliest accounts, particularly the relations of Jogues and Milet.[8]

The story of the French missions in New York is told elsewhere;[9] those of the Protestant English yield us less.[10]

We have another source in the local histories of New York.[11] The earliest of the general histories of the Iroquois is that of Cadwallader

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[1] Cf. *Report on the Mass. Archives* (1885).

[2] Vol. III. p. 362.

[3] Dr. Ellis has a paper on the Indians of eastern Massachusetts in the *Mem. Hist. Boston*, i. 241. For the middle regions there are Epaphras Hoyt's *Antiquarian Researches* (Greenfield, 1824), and Temple's *North Brookfield*, not to name other books. For the Stockbridge tribe and the Housatonics, see Samuel Hopkins' *Hist. Memoirs relating to the Housatunnuk Indians* (1753); Jones' *Stockbridge;* Charles Allen's *Report on the Stockbridge Indians* (Boston, 1870; *Ho. Doc. Mass. Leg.*, no. 13, of 1870); S. Orcutt's *Indians of the Housatonic and Naugatuck Valleys* (Hartford, 1882); *Mag. Amer. Hist.*, Dec., 1878; and Miss Fletcher's *Report*, pp. 38, 90. For the Wampanoags on the borders of Rhode Island, see *Smithsonian Report*, 1883; and William J. Miller's *Notes concerning the Wampanoag tribe of Indians, with some account of a rock picture on the shore of Mount Hope Bay, in Bristol, R. I.* (Providence, 1880).

[4] Potter's *Early Hist. of Narragansett ; R. I. Hist. Coll.*, viii.; Henry Bull's Memoir in *R. I. Hist. Mag.*, April, 1886; Usher Parsons on the Nyantics in *Hist. Mag.*, Feb., 1863.

[5] Theo. Dwight's *Connecticut*, ch. 5–7; Trumbull's *Connecticut*, ch. 5, 6; Ellis' *Life of Capt. Mason ;* W. L. Stone's *Uncas and Miantonomoh ;* S. Orcutt's *Stratford and Bridgeport* (1886); Luzerne Ray in *New Englander*, July, 1843 (reprinted in Beach's *Ind. Miscellany*).

On the Pequods, see Wm. Apes' *Son of the Forest*, and other small books by this member of the tribe, published from 1829 to 1837; Lossing in *Scribner's Monthly*, ii., Oct., 1871 (included in Beach). Cf. our Vol. III. p. 368.

[6] Further modern portraitures can be found in Dwight's *Travels;* Barry's *Massachusetts:* Felt's *Eccles. Hist. N. E.* (p. 279); Samuel Eliot on the "Early relations with the Indians" in the volume of the *Mass. Hist. Soc. Lectures;* Zachariah Allen on *The conditions of life, habits, and customs of the native Indians of America, and their treatment by the first settlers. An address before the Rhode Island Historical Society, Dec. 4, 1879* (Providence, 1880). Cf. on the Indians and the Puritans, *Amer. Chh. Review*, iii. 208, 359.

[7] Cf. Brodhead's *New York;* the *Doc. Hist. N. Y.;* and Wm. Eliot Griffis' *Arent van Curler and his policy of peace with the Iroquois* (1884).

[8] Cf. Vol. IV. 306. The best source for the story of Jogues is Felix Martin's *Life of Father Isaac Jogues, missionary priest of the Society of Jesus, slain by the Mohawk Iroquois, in the present state of New York, Oct. 18, 1646. With* [*his*] *account of the captivity and death of René Goupil, slain Sept. 29, 1642. Translated from the French by J. G. Shea* (New York, 1885). It is accompanied by a map of the county by Gen. John S. Clark, indicating the sites of the Indian villages and missions, which is an improvement upon Clark's earlier map, given *post*, Vol. IV. 293. Cf. *Hist. Mag.*, xii. 15; Hale's *Book of Rites*, introd. W. H. Withrow has a paper on Jogues in the *Proc. Roy. Soc. Canada*, iii. (2) 45.

[9] Vol. IV. 279, 309.

[10] Cf. D. Humphrey's *Hist. Acc. of the Soc. for propagating the Gospel* (1730); *Doc. Hist. N. Y.*, iv.; A. G. Hopkins in the *Oneida Hist. Soc. Trans.*, 1885–86, p. 5; W. M. Beauchamp in *Am. Chh. Rev.*, xlvi. 87; S. K. Lothrop's *Kirkland;* and Miss Fletcher's *Report* (1888), p. 85.

[11] Sylvester's *Northern New York;* Clark's *Onondaga;* Jones's *Oneida County;* Simms' *Schoharie County;* Benton's *Herkimer County;* C. E. Stickney's *Minisink Region;* G. H. Harris' *Aboriginal occupation of the lower Genesee County* (Rochester, 1884,—taken from W. F. Peck's *Semi-Centennial Hist. of Rochester*); Ketchum's *Buffalo;* John Wentworth Sanborn's *Legends, Customs, and Social Life of the Seneca Indians* (Gowanda, N. Y., 1878). On the origin of the name Seneca, see O. H. Marshall's *Hist. Writings*, p. 231.

Colden, and the best edition is *The history of the five Indian nations depending on the province of New-York. Reprinted exactly from Bradford's New York edition, 1727; with an introduction and notes by J. G. Shea* (New York, 1866).[1] The London reprints of 1747, and later, unfortunately added to the title *Five Indian Nations [of Canada]* the words in brackets. This was the very point denied by the English, who claimed that the French had no territorial rights south of the lakes. Otherwise his title conveys two significant facts: first, that the English had come to regard the Five Nations as their "dependants"; and second, that these Indians actually were a barrier between them and the French. There was something farcical in the formula used by Sir Wm. Johnson in a letter to the ministry: "The combined tribes have taken arms against his Britannic Majesty." The Mohawks had been induced to ask that the Duke of York's arms should be attached to their castles. This had been assented to, and allowed as a security against the inroads of the French — a sort of talismanic charm which might be respected by European usage. But those ducal bearings did not have their full meaning to the Iroquois as binding their own allegiance, nor were the Six Nations ever the gainers by being thus constructively protected.

Colden was born in Scotland in 1688, and died on Long Island in 1776. He was a physician, botanist, scholar, and literary man, able and well qualified in each pursuit. The greater part of his long life was spent in this country. As councillor, lieutenant-governor, and acting governor, he was in the administration of New York from 1720 till near his death. He was a most inquisitive and intelligent investigator and observer of Indian history and character. In dedicating his work to General Oglethorpe, he claims to have been prompted to it by his interest in the welfare of the Five Nations. He is frank and positive in expressing his judgment that they had been degraded and demoralized by their intercourse with the whites. He says that he wrote the former part of his history in New York, in 1727, to thwart the manœuvres of the French in their efforts to monopolize the western fur trade. They had been allowed to import woollen goods for the Indian traffic through New York. Governor Burnet advised that a stop be put to this abuse. The New York legislature furthered his advice, and built a fort at Oswego for three hundred traders. When the Duke of York was represented here by Governor Dongan, and "Popish interests" were allowed sway, — there being at the time a mean pretence of amity between England and France, — the interests of the former were sacrificed to those of the latter. This, of course, had a bad influence on the Five Nations, as leading them to regard the French as masters. The whole of the first part of Colden's History deals with the Iroquois as merely the centre of the rivalry between the French and the English with their respective savage allies. The English had the advantage at the start, because from the earliest period when Champlain made a hostile incursion into the country of the Iroquois, attended by their Huron enemies, the relations of enmity were decided upon, and afterwards were constantly imbittered by a series of invasions. The French sought to undo their own influence of this sort when it became necessary for them to try to win over the Iroquois to their own interest in the fur traffic. The Confederacy which existed among the Five, and afterwards the Six, Nations was roughly tried when there was so sharp a bidding for alliances between one or another of the tribes by their European tempters. An incidental and very embarrassing element came in to complicate the relations of the parties, English, French, and Indians, on the grounds of the claim advanced by the English to hold the region beyond the Alleghanies by cession from the Iroquois in a council in 1726. The question was whether the Iroquois had previous to that time obtained tenable possession of the Ohio region, by conquest of the former occupants. It would appear that after that conquest that region was for a time wellnigh deserted. When it was to some extent reoccupied, the subsequent hunters and tenants of it denied the sovereignty of the Iroquois and the rights of the English intruders who relied upon the old treaty of cession.

The rival French history while Colden was in vogue was the third volume of Bacqueville de la Potherie's *Hist. de l'Amérique Septentrionale* (Paris, 1753); and another contemporary English view appeared in Wm. Smith's *Hist. of the Province of New York* (1757).[2] Nothing appeared after this of much moment as a general account of the Six Nations till Henry R. Schoolcraft made his *Report* to the New York authorities in 1845, which was published in a more popular form in his *Notes on the Iroquois, or Contributions to American history, antiquities,*

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[1] See Vol. IV. 299. Shea says the only copies known of the 1727 edition are those noted in the catalogues of H. C. Murphy, Menzies, Brinley, and T. H. Morrell. Stevens noted a copy in 1885, at £42. The *Murphy Catalogue* gives the various editions. Cf. Sabin and Pilling. There is an account of Colden in the *Hist. Mag.*, Jan., 1865. Palfrey (*New England*, iv. 40) warns the student that Colden must be used with caution, and that he needs to be corrected by Charlevoix.

[2] See Vol. V. 618.

and general ethnology (Albany, 1847), a book not valued overmuch.[1]

Better work was done by J. V. H. Clark in what is in effect a good history of the Confederacy, in his *Onondaga* (Syracuse, 1849). The series of biographies by W. L. Stone, of Sir William Johnson, Brant, and Red Jacket, form a continuous history for a century (1735–1838).[2] The most carefully studied work of all has been that of Lewis H. Morgan in his *League of the Iroquois* (1851), a book of which Parkman says (*Jesuits*, p. liv) that it commands a place far in advance of all others, and he adds, "Though often differing widely from Mr. Morgan's conclusions, I cannot bear too emphatic testimony to the value of his researches."[3] The latest scholarly treatment of the Iroquois history is by Horatio Hale in the introduction to *The Iroquois Book of Rites* (Philad., 1883), which gives the forms of commemoration on the death of a chief and upon the choice of a successor.[4]

Moving south, the material grows somewhat scant. There is little distinctive about the New Jersey tribes.[5] For the Delawares and the Lenni Lenape, the main source is the native bark record, which as Walam-Olum was given by Squier in his *Historical and Mythological Traditions of the Algonquins*,[6] as translated by Rafinesque,[7] while a new translation is given in D. G. Brinton's *Lenâpé and their legends; with the complete text and symbols of the Walam Olum, a new translation, and an inquiry into its authenticity* (Philadelphia, 1885), making a volume of his *Library of aboriginal American literature;* and the book is in effect a series of ethnological studies on the Indians of Pennsylvania, New Jersey, and Maryland.[8]

In addition to some of the early tracts[9] on Maryland[10] and Virginia and the general histories, like those of Beverly, and Stith for Virginia, and particularly Bozman for Maryland, with Henning's *Statutes*, and some of the local histories,[11] we have little for these central coast regions.[12] In Carolina we must revert to such early books as Lawson and Brickell; to Carroll's *Hist. Collections of South Carolina*, and to occasional periodic papers.[13]

Farther south, we get help from the early

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[1] Cf. Vol. IV. 297. Schoolcraft later included in his *Indian Tribes* a reprint of David Cusick's *Ancient Hist. of the Six Nations* (1825), the work of a Tuscarora chief. Brinton (*Myths*, 108) calls it of little value. Elias Johnson, another Tuscarora, printed a little *Hist. of the Six Nations* at Lockport in 1881.

[2] See Vol. V., VI., VII.

[3] This was the earliest of Morgan's important writings on the Iroquois, but the full outcome of all his views on the Indian character and life can only be studied by following him through his later *Ancient Society*, his *Systems of Consanguinity and Affinity*, and his *Houses and House-life of the American Aborigines.* Cf. Pilling's *Proof-sheets* for a conspectus of his works. Morgan's early studies on the Iroquois sensibly affected his judgment in his later treatment of all other North American tribes.

[4] Hale has also contributed to the *Mag. Amer. Hist.*, 1885, xiii. 131, a paper on "Chief George H. M. Johnson, his life and work among the Six Nations;" and to the *Amer. Antiquarian*, 1885, vii. 7, one on "The Iroquois sacrifice of the white dog."

A few other references on the Iroquois follow: Drake's *Book of the Indians*, book v.; D. Sherman in *Mag. West. Hist.*, i. 467; W. W. Beauchamp in *Amer. Antiquarian* (Nov., 1886), viii. 358; D. Gray on the last Indian council in the Genesee Country, in *Scribner's Mag.*, xxv. 338; *Penna. Mag.*, i. 163, 319; ii. 407. For the Schaghticoke tribe, see *Hist. Mag.*, June, 1870; and for those of the Susquehanna Valley, Miner's *Wyoming* and Stone's *Wyoming.* E. M. Ruttenber's *Indian Tribes of the Hudson River* (Albany, 1872) is an important book. Miss Fletcher's *Report* includes a paper on the N. Y. Indians, by F. B. Hough.

[5] *N. Jersey Hist. Soc. Proc.*, vol. iv.

[6] There is a sketch of this singular character in Brinton's *Lenape*, ch. 7.

[7] Also *Amer. Whig Review*, Feb., 1849; and in Beach's *Indian Miscellany.*

[8] We may also note: D. B. Brunner's *Indians of Berks county, Pa.; being a summary of all the tangible records of the aborigines of Berks County* (Reading, Pa., 1881), and W. J. Buck's "Lappawinzo and Tishcohan chiefs of the Lenni Lenape" in the *Penna. Mag. of Hist.*, July, 1883, p. 215. The early writers to elucidate the condition of the Delawares soon after the white contact are Vanderdonck, Campanius, Gabriel Thomas, and later there is something of value in Peter Kalm's *Travels.* The early authorities on Pennsylvania need also to be consulted, as well as the *Penna. Archives*, and the *Collections* of the Penna. Hist. Soc., and its *Bulletin*, whose first number has Ettwein's *Traditions and language of the Indians.* Of considerable historical value is Charles Thomson's *Enquiry* (see Vol. V. 575), and the relations of the Quakers to the tribes are surveyed in an *Account of the Conduct of the Society of Friends towards the Indian Tribes* (Lond., 1844); but other references will be found *post*, Vol. V. 582, including others on the Moravian missions, the literature of which is of much importance in this study. Cf. Chas. Beatty's *Journal of a two months' tour* (London, 1768), the works of Heckewelder and Loskiel, and Schweinitz's *Zeisberger.* Cf. Miss Fletcher's *Report*, p. 78.

[9] Vol. III., under Virginia and Maryland. Cf. *Hist. Mag.*, March, 1857.

[10] For instance, the *Relatio itineris in Marylandiam.*

[11] See Vol. III.

[12] The latest summary is in Miss Fletcher's *Report*, ch. 2 and 3.

[13] F. Kidder in *Hist. Mag.* (1857), i. 161. Doyle's *English in America, Virginia, etc.* (London, 1882) gives a brief chapter to the natives. Cf. travels of Bartram and Smyth, and Miss Fletcher's *Report*, ch. 19.

Spanish and French, — Herrera, Barcia, the chroniclers of Florida, Davilla Padilla, Laudonnière, the memorials of De Soto's march, the documents in the collections of Ternaux, Buckingham Smith, and B. F. French, all of which have been characterized elsewhere.[1]

The later French documents in Margry and the works of Dumont and Du Pratz give us additional help.[2] On the English side we find something in Coxe's *Carolana*, in Timberlake, in Lawson,[3] in the Wormsloe quartos on Georgia and South Carolina,[4] and in later books like Filson's *Kentucke*, John Haywood's *Nat. and Aborig. Hist. Tennessee* (down to 1768), Benjamin Hawkins's *Sketch of the Creek Country* (1799), and Jeffreys' *French Dominion in America*. Brinton, in *The National Legend of the Chata-Mus-ko-kee tribes* (in the *Hist. Mag.*, Feb., 1870), printed a translation of "What Chekilli the head chief of the upper and lower Creeks said in a talk held at Savannah in 1735," which he derived from a German version preserved in *Herrn Philipp Georg Friederichs von Reck Diarium von seiner Reise nach Georgien im Jahr 1735* (Halle, 1741).[5] This legend is taken by Albert S. Gatschet, in his *Migration Legend of the Creek Indians, with a linguistic, historic, and ethnographic introduction* (Philad., 1884), as a centre round which to group the ethnography of the whole gulf water-shed of the Southern States, wherein he has carefully analyzed the legend and its language, and in this way there is formed what is perhaps the best survey we have of the southern Indians.

This we may supplement by Pickett's *Alabama*. Col. C. C. Jones, Jr., has given us a sketch (1868) of Tomo-chi-chi, the chief who welcomed Oglethorpe.[6]

C. C. Royce has given us glimpses of the relations of the Cherokees and the whites in the *Fifth Report, Bureau of Ethnology*. A recent book is G. E. Foster's *Se-Quo-Yah, the American Cadmus and modern Moses. A biography of the greatest of redmen, around whose life has been woven the manners, customs and beliefs of the early Cherokees, with a recital of their wrongs and progress toward civilization* (Philadelphia, etc., 1885.)[7] Gatschet cites the *Mémoire* of Milfort, a war chief of the Creeks.[8] The Chippewas are commemorated in a paper in Beach's *Indian Miscellany*.[9] The Seminole war produced a literature[10] bearing on the Florida tribes. Bernard Romans' *Florida* (1775) gave the comments of an early English observer of the natives of the southeastern parts of the United States. Dr. Brinton's *Floridian Peninsula* and the paper of Clay Maccauley on the Seminoles in the *Fifth Rept. Bureau of Ethnology* help out the study. The Natchez have been considered as allied with the races of middle America,[11] and we may go back to Garcilasso de la Vega and the later Du Pratz for some of the speculations about them, to be aided by the accounts we get from the French concerning their campaigns against them.[12]

The placing of the tribes in the Ohio Valley is embarrassed by their periodic migrations.[13] Brinton follows the migrations of the Shawanees,[14] and C. C. Royce seeks to identify them in their wanderings.[15] O. H. Marshall tracks other tribes along the Great Lakes.[1] Hiram W. Beckwith places those in Illinois and Indiana.[2] The Wyandots[3] have been treated, as affording a type for a short study of tribal society, by Major Powell in the *Bureau of Ethnology, First Report.*[4] G. Gale's *Upper Mississippi* (Chicago, 1867) gives us a condensed summary of the tribes of that region, and Miss Fletcher's *Report* will help us for all this territory. Use can be also made of Caleb Atwater's *Indians of the Northwest, or a Tour to Prairie du Chien* (Columbus, 1850). Dr. John G. Shea and others have used the *Collections of the Wisconsin Historical Society* to make known their studies of the tribes of that State.[5] One of the most readable studies of the Indians in the neighborhood of Lake Superior is John G. Kohl's *Kitchi-Gami* (1860). The authorities on the Black Hawk war throw light on the Sac and Fox tribes.[6] Pilling's *Bibliography of the Siouan Languages* (1887) affords the readiest key to the mass of books about the Sioux or Dacotah stocks from the time of Hennepin and the early adventurers in the Missouri Valley. The travellers Carver and Catlin are of importance here. Mrs. Eastman's *Dacotah, or life and legends of the Sioux* (1849) is an excellent book that has not yet lost its value; and the same can be said of Francis Parkman's *California and the Oregon Trail* (N. Y., 1849), which shows that historian's earliest experience of the wild camp life. Miss Alice C. Fletcher is the latest investigator of their present life.[7] Of the Crows we have some occasional accounts like Mrs. Margaret J. Carrington's *Absaraka.*[8] On the Modocs we have J. Miller's *Life among the Modocs* (London, 1873). J. O. Dorsey has given us a paper on the Omaha sociology in the *Third Rept. Bureau of Ethnology* (p. 205); and we may add to this some account in the *Transactions* (vol. i.) of the Nebraska State Hist. Society, and a tract by Miss Fletcher on the *Omaha tribe of Indians in Nebraska* (Washington, 1885). The Pawnees have been described by J. B. Dunbar in the *Mag. Amer. Hist.* (vols. iv., v., viii., ix.). The Ojibways have had two native historians, — Geo. Copway's *Traditional Hist. of the Ojibway Nation* (London, 1850), and Peter Jones' *Hist. of the Ojibway Indians, with special reference to their conversion to Christianity* (London, 1861). The *Minnesota Hist. Soc. Collections* (vol. v.) contain other historical accounts by Wm. W. Warren and by Edw. D. Neill, — the latter touching their connection with the fur-traders. Miss Fletcher's *Report* (1888) will supplement all these accounts of the aborigines of this region.

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[1] Vol. II.

[2] Vol. V. p. 65.

[3] Vol. V. p. 69, 344, 393.

[4] Vol. V. p. 401.

[5] This also makes part of the Urlsperger tract, *Ausführliche Nachricht von den Saltzburgischen Emigranten* (Halle, 1835). See Vol. V. p. 395.

[6] Vol. V. p. 399. Cf. *Mag. Amer. Hist.*, v. 346.

[7] The long contested case of the Cherokees *v.* Georgia brought out much material. Cf. Vol. VII. p. 322, and *Poole's Index*, p. 225. There is a somewhat curious presentation of the Cherokee mind in the address of Dewi Brown in the *Mass. Hist. Soc. Proc.*, xii. 30.

[8] The histories of the Creek war give some material. See Vol. VII. and Harrison's *Life of John Howard Payne*, ch. 4. Cf. *Poole's Index*, p. 314.

[9] Cf. *Poole's Index.*

[10] See Vol. VII.

[11] Cf. Claiborne's *Mississippi*, i.; Brinton in *Hist. Mag.*, 2d ser., vol. i. p. 16; and E. L. Berthoud's *Natchez Indians* (Golden, 1886), a pamphlet.

[12] Vol. V. p. 68. Cf. also an abridged memoir of the missions in Louisiana by Father Francis Watrin, Jesuit, 1764–65, in *Mag. West. Hist.*, Feb., 1885, p. 265; the *Travels into Arkansa territory*, 1819, by Thomas Nuttall (Philad., 1821), for other accounts of the aboriginal inhabitants of the banks of the Mississippi; the *History of Kansas* (Chicago, 1883), p. 58; and the *Proceedings* of the Kansas Hist. Society.

[13] Cf. Vol. IV. p. 298; and C. W. Butterfield in the *Mag. West. Hist.*, Feb., 1887: and on the Indian occupation of Ohio, *Ibid.*, Nov., 1884. David Jones' *Two Visits*, 1772–73, concerns the Ohio Indians. Our Vol. V. covers this region during the French wars. J. R. Dodge's *Red Man of the Ohio Valley, 1650–1795* (Springfield, O., 1860), is a popular book.

[14] *Hist. Mag.*, x. (Jan., 1866).

[15] *Mag. West. Hist.*, ii. 38.

Our best knowledge of the southwestern Indians, the Apaches, Navajos, Utes, Comanches, and the rest, comes from such government observers as Emory in his *Military Reconnaissance;* Marcy's *Exploration of the Red River in 1852;* J. H. Simpson in his *Expedition into the Navajo Country* (1856); and E. H. Ruffner's *Reconnoissance in the Ute Country* (1874). The fullest references are given in Bancroft's *Native Races,*[9] with a map.

We may still find in Bancroft's *Native Races* (i. ch. 2, 3) the best summarized statement with references on the tribes of the upper Pacific coast, and follow the development of our knowledge in the narratives of the early explorers of that coast by water, in the account of Lewis and Clark and other overland travels, and in such tales of adventures as the *Journal kept at Nootka Sound by John R. Jewitt,* which has had various forms.[10]

The earliest of the better studied accounts of these northwestern tribes was that of Horatio Hale in the volume (vi.) on ethnography, of the Wilkes' *United States Exploring Expedition* (Philad., 1846), and the same philologist's paper in the *Amer. Ethnological Society's Transactions* (vol. ii.). Recent scientific results are found in *The North-West Coast of America, being Results of Recent Ethnological Researches, from the Collections of the Royal Museums at Berlin, published by the Directors of the Ethnological Department, by Herr E. Krause, and partly by Dr. Grunwedel, translated from the German, the Historical and Descriptive Text by Dr. Reiss* (New York, 1886), and in the first volume of the *Contributions to North Amer. Ethnology* (Powell's Survey), in papers by George Gibbs on the tribes of Washington and Oregon, and by W. H. Dall on those of Alaska.[1]

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[1] *Hist. Writings,* 1887.

[2] *Fergus Hist. Series, No. 27* (1884). Cf. Hough's map of the tribal districts of Indiana in his *Rept. on the Geology and Nat. Hist. of Indiana* (1882).

[3] See Vol. IV. 298.

[4] Cf. *Hist. Mag.,* Sept., 1861; and Peter D. Clarke's *Origin and Traditional Hist. of the Wyandotts* (Toronto, 1870). Clarke is a native Indian writer.

[5] Cf. I. A. Lapham on the *Indians of Wisconsin* (Milwaukee, 1879); and E. Jacker on the missions in *Am. Cath. Quart.,* i. 404; also Miss Fletcher's *Report,* ch. 21.

[6] Vol. VII.

[7] Cf. her *Report* (1888), ch. 10, and her *Indian ceremonies* (Salem, Mass., 1884), taken from the xvi. *Report of the Peabody Museum of Amer. Archæology and Ethnology,* 1883, pp. 260–333, and containing: The white buffalo festival of the Uncpapas. — The elk mystery or festival. Ogallala Sioux. — The religious ceremony of the four winds or quarters, as observed by the Santee Sioux. — The shadow or ghost lodge: a ceremony of the Ogallala Sioux. — The "Wawan," or pipe dance of the Omahas.

The *Minnesota Hist. Soc. Collections* have much on the Dacotahs.

[8] *Ab-sa-ra-ka, home of the Crows, being the experience of an officer's wife on the plains, with outlines of the natural features of the land, tables of distances, maps* [etc.] (Philad., 1868).

[9] These may be supplemented by Letheman's account of the Navajos in the *Smithsonian Rept.,* 1855, p. 280; and books of adventures, like Ruxton's *Life in the Far West;* Pumpelly's *Across America and Asia;* H. C. Dorr in *Overland Monthly,* Apr., 1871 (also in Beach's *Indian Miscellany*); James Hobbs' *Wild life in the far West* (Hartford, 1875), — not to name others, and a large mass of periodical literature to be reached for the English portion through *Poole's Index.* Cf. Miss Fletcher's *Report* (1888).

[10] *A Journal, kept at Nootka Sound, by John R. Jewitt, one of the surviving crew of the ship Boston, of*

For the tribes of California, Bancroft's first volume is still the useful general account; but the Federal government have published several contributions of scientific importance: that of Stephen Powers in the *Contributions to No. Amer Ethnology* (vol. iii., 1877);[2] the ethnological volume (vii.) of *Wheeler's Survey*, edited by Putnam; and papers in the *Smithsonian Reports*, 1863–64, and in Miss Fletcher's *Report*, 1888.[3]

This survey would not be complete without some indication of the topical variety in the consideration of the native peoples, but we have space only to mention the kinds of special treatment, shown in accounts of their government and society, their intellectual character, and of some of their customs and amusements.[4] Their industries, their linguistics, and their myths have been considered with wider relations in the appendixes of the present volume.

George E. Ellis.

Justin Winsor

Boston, John Salter, commander, who was massacred on 22d of March, 1803. Interspersed with some account of the natives, their manners and customs (Boston, 1807). Another account has been published with the title, "A narrative of the adventures and sufferings of J. R. Jewitt," compiled from Jewitt's "Oral relations," by Richard Alsop; and another alteration and abridgment by S. G. Goodrich has been published with the title, "The captive of Nootka." Cf. Sabin, Pilling, Field, etc. Cf. also *Hist. Mag.*, Mar., 1863. The French half-breeds of the Northwest are described by V. Havard in the *Smithsonian Rept.*, 1879.

[1] Dall's *Alaska and its Resources* (Boston, 1870), with its list of books, is of use in this particular field. Cf. also Miss Fletcher's *Report* (1888), ch. 19 and 20.

[2] His map is reproduced in Petermann's *Geog. Mittheilungen*, xxv. pl. 13.

[3] The periodical literature can be reached through *Poole's Index;* particularly to be mentioned, however, are the *Atlantic Monthly*, Apr., 1875; by J. R. Browne in *Harper's Mag.*, Aug., 1861, repeated in Beach's *Ind. Miscellany*. For the missionary aspects see such books as Geronimo Boscana's *Chinigchinich; a historical account of the origin, customs, and traditions of the Indians at the missionary establishment of St. Juan Capistrano, Alta California; called the Acagchemem nation. Translated from the original Spanish manuscript, by one who was many years a resident of Alta California* [Alfred Robinson] (N. Y., 1846), which is included in Robinson's *Life in California* (N. Y., 1846); and C. C. Painter's *Visit to the mission Indians of southern California, and other western tribes* (Philadelphia, 1886).

[4] See, for instance: Maj. Powell on tribal society in the *Third Rept. Bur. of Ethnology*. On Totemism, see the *Fourth Rept.*, p. 165, and J. G. Frazier in his *Totemism* (Edinburgh, 1887). Lucien Carr on the social and political condition of women among the Huron-Iroquois tribes, in *Peabody Mus. Rept.*, xvi. 207. J. M. Browne on Indian medicine in the *Atlantic*, July, 1866, reprinted in Beach's *Indian Miscellany*. J. M. Lemoine on their mortuary rites in *Proc. Roy. Soc. Canada*, ii. 85, and H. C. Yarrow on their mortuary customs in the *First Rept. Bur. Ethnol.*, p. 87, and on their mummifications in *Ibid.* p. 130. Andrew MacFarland Davis on Indian games in the *Bulletin, Essex Institute*, vols. xvii., xviii., and separately. On their intellectual and literary capacity, John Reade in the *Proc. Roy. Soc. of Canada* (ii. sect. 2d, p. 17); Edward Jacker in *Amer. Catholic Quarterly* (ii. 304; iii. 255); Brinton's *Lenape and their legends;* W. G. Simms' *Views and Reviews.*

CHAPTER VI.

THE PREHISTORIC ARCHÆOLOGY OF NORTH AMERICA.

BY HENRY W. HAYNES,

Archæological Institute of America.

BY the discovery of America a new continent was brought to light, inhabited by many distinct tribes, differing in language and in customs, but strikingly alike in physical appearance. All that can be learned in regard to their condition, and that of their ancestors, prior to the coming of Columbus, falls within the domain of the prehistoric archæology of America. This recent science of Prehistoric Archæology deals mainly with facts, not surmises. In studying the past of forgotten races, "hid from the world in the low-delved tomb," her chief agent is the spade, not the pen. Her leading principles, the lamps by which her path is guided, are superposition, association, and style. Does this new science teach us that the tribes found in possession of the soil were the descendants of its original occupants, or does she rather furnish reasons for inferring that these had been preceded by some extinct race or races? The first question, therefore, that presents itself to us relates to the antiquity of man upon this continent; and in respect to this the progress of archæological investigation has brought about a marked change of opinion. Modern speculation, based upon recent discoveries, inclines to favor the view that this continent was inhabited at least as early as in the later portion of the quaternary or pleistocene period. Whether this primitive people was autochthonous or not, is a problem that probably will never be solved; but it is now generally held that this earliest population was intruded upon by other races, coming either from Asia or from the Pacific Islands, from whom were descended the various tribes which have occupied the soil down to the present time.

The writer believes also that the majority of American archæologists now sees no sufficient reason for supposing that any mysterious, superior race has ever lived in any portion of our continent. They find no archæological evidence proving that at the time of its discovery any tribe had reached a stage of culture that can properly be called civilization. Even if we accept the exaggerated statements of the Spanish conquerors, the most intelligent and advanced peoples found here were only semi-barbarians, in the stage of transition from the stone to the bronze age, possessing no written language, or what can properly be styled an alphabet, and not yet having even learned the use of beasts of burden.

By a large and growing school of archæologists, moreover, it is maintained that all the various tribes upon this continent, notwithstanding their different degrees of advancement, were living under substantially similar institutions; and that even the different forms of house construction practised by them were only stages in the development of the same general conceptions. Without attempting to dogmatize about such difficult problems, the object of this chapter is to set forth concisely such views as recommend themselves to the writer's judgment. He is profoundly conscious of the limitations of his knowledge, and fully aware that his opinions will be at variance with those of other competent and learned investigators. *Non nostrum tantas componere lites.*

The controversy in regard to the antiquity of man in the old world may be regarded as substantially settled. Scarcely any one now denies that man was in existence there during the close of the quaternary or pleistocene period; but there is a great difference of opinion as to the sufficiency of the evidence thus far brought forward to prove that he had made his appearance in Europe in the previous tertiary period, or even in the earlier part of the quaternary. What is the present state of opinion in regard to the correlative question about the antiquity of man in America? Less than ten years ago the latest treatise published in this country, in which this subject came under discussion, met the question with the sweeping reply that "no truly scientific proof of man's great antiquity in America exists."[1] But we think if the author of that thorough and "truly scientific" work were living now his belief would be different. After a careful consideration of all the former evidence that had been adduced in proof of man's early existence upon this continent, none of which seemed to him conclusive, he goes on to state that "Dr. C. C. Abbott has unquestionably discovered many palæolithic implements in the glacial drift in the valley of the Delaware River, near Trenton, New Jersey."[2] Now a single discovery of this character, if it were unquestionable, or incapable of any other explanation, would be sufficient to prove that man existed upon this continent in quaternary times. The establishment, therefore, of the antiquity of man in America, according to this latest authority, seems to rest mainly upon the fact of the discovery by Dr. Abbott of palæolithic implements in the valley of the Delaware. To quote the language of an eminent European man of science, "This gentleman appears to stand in a somewhat similar relation to this great question in America as did Boucher de Perthes in Europe."[3] The opinion of the majority of American geologists upon this point is clearly indicated in a very recent article by Mr. W. J. McGee, of e U. S. Geological Survey: "But it is in the aqueo-glacial gravels of the elaware River, at Trenton, which were laid down contemporaneously ith the terminal moraine one hundred miles further northward, and which ave been so thoroughly studied by Abbott, that the most conclusive proof f the existence of glacial man is found."[1] It will accordingly be necessary give in considerable detail an account of the discovery of palæolithic implements by Dr. Abbott in the Delaware valley, and of its confirmation by ifferent investigators, as well as of such other discoveries in different parts f our country as tend to substantiate the conclusions that have been drawn rom them by archæologists.

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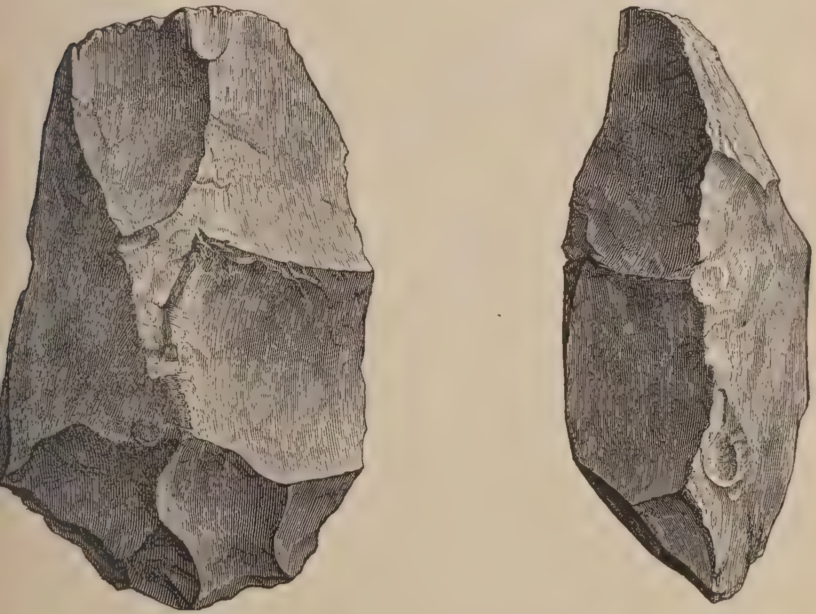
[1] *The North Americans of Antiquity*, by John T. Short, p. 130.

[2] *Ibid.* p. 127.

[3] *The Antiquity of Man in America*, by Alfred R. Wallace in *Nineteenth Century* (November, 1887), vol. xxii. p. 673.



PALÆOLITHIC IMPLEMENT FROM THE TRENTON GRAVELS.*

By the term palæolithic implements we are to understand certain rude tone objects, of varying size, roughly fashioned into shape by a process of hipping away fragments from a larger mass so as to produce cutting edges, ith convex sides, massive, and suited to be held at one end, and usually ointed at the other. These have never afterwards been subjected to any moothing or polishing process by rubbing them against another stone. ut it is only when such rude tools have been found buried in beds of ravel or other deposits, which have been laid down by great floods towards he close of what is known to geologists as the quaternary or pleistocene period, that they can be regarded as really palæolithic.[1] At that epoc which immediately preceded the present period, certain rivers flowed with volume of water much greater than now, owing to the melting of the thic ice-cap once covering large portions of the northern hemisphere, which wa accompanied by a climate of great humidity. Vast quantities of gravel were washed down from the débris of the great terminal moraine of thi ice-sheet, and were accumulated in beds of great thickness, extending i some instances as high as two hundred feet up the slopes of the river va leys. In such deposits, side by side with the rude products of human in dustry we have thus described, and deposited by the same natural forces are found the fossil remains of several species of animals, which hav subsequently either become extinct, like the mammoth and the tichorhin rhinoceros, or, driven southwards by the encroaching ice, have since it disappearance migrated to arctic regions, like the musk-sheep and the rein deer, or to the higher Alpine slopes, like the marmot. Such a discover establishes the fact that man must have been living as the contemporary o these extinct animals, and this is the only proof of his antiquity that is a present universally accepted.

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[1] *Palæolithic Man in America*, in *Popular Science Monthly* (November, 1888), p. 23.

* Side and edge view, of natural size. From the *Peabody Museum Reports*, vol. ii. p. 33.

There has been much discussion among geologists in regard to bot the duration and the conditions of the glacial period, but it is now th settled opinion that there have been two distinct times of glacial action separated by a long interval of warmer climate, as is proved by the occur rence of intercalated fossiliferous beds; this was followed by the fina retreat of the glacier.[2] The great terminal moraine stretching across th United States from Cape Cod to Dakota, and thence northward to th foot of the Rocky Mountains, marks the limit of the ice invasion in th second glacial epoch. South of this, extending in its farthest boundar as low as the 38th degree of latitude, is a deposit which thins out as we g west and northwest, and which is called the drift-area. The drift gradu ates into a peculiar mud deposit, for which the name of "loess" has bee adopted from the geologists of Europe, by whom it was given to a thic alluvial stratum of fine sand and loam, of glacial origin. This attenuate drift represents the first glacial invasion. From Massachusetts as far a northern New Jersey, and in some other places, the deposits of the tw epochs seem to coalesce.[3]

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[1] Sometimes the gravels in which such implements were originally deposited have disappeared through denudation or other natural causes, leaving the implements on the surface. But the outside of such specimens always shows traces of decomposition, indicating their high antiquity. Other examples of implements of like shape, found on the surface in places where there has been no glacial drift, may be palæolithic, but their form is no sufficient proof of this, since they may equally well have been the work of the Indians, who are known to have fashioned similar objects.

[2] *The Great Ice Age and its relation to the an tiquity of Man*, by James Geikie, p. 416.

[3] *An Inventory of our Glacial Drift*, by T. C Chamberlin in the *Proceedings of American As sociation for Advancement of Science*, vol. xxxv p. 196. A general map of this great morain and others representing portions of it on a larg scale will be found in his "Preliminary Paper o the terminal moraine of the second glacial pe riod," in the *Third Annual Report of the U. S Geological Survey*, by J. W. Powell (Washing ton, 1883).

The interval of time that separated the two glacial periods can be best nagined by considering the great erosions that have taken place in the lleys of the Missouri and of the upper Ohio. "Glacial river deposits of e earlier epoch form the capping of fragmentary terraces that stand 250 300 feet above the present rivers;" while those of the second epoch retch down through a trough excavated to that depth by the river through ese earlier deposits and the rock below.[1]

As to the probable time that has elapsed since the close of the glacial riod, the tendency of recent speculation is to restrict the vast extent that as at first suggested for it to a period of from twenty thousand to thirty ousand years. The most conservative view maintains that it need not ive been more than ten thousand years, or even less.[2] This lowest timate, however, can only be regarded as fixing a minimum point, and an itiquity vastly greater than this must be assigned to man, as of necessity must have been in existence long before the final events occurred in der to have left his implements buried in the beds of débris which they casioned.

In April, 1873, Dr. C. C. Abbott, who was already well known as an vestigator of the antiquities of the Indian races, which he believed had issed from "a palæolithic to a neolithic condition" while occupying the tlantic seaboard, published an article on the "Occurrence of implements in e river-drift at Trenton, New Jersey."[3] In this he described and figured ree rude implements, which he had found buried at a depth as great in one stance as sixteen feet in the gravels of a bluff overlooking the Delaware iver. He argued that these must be of greater antiquity than relics und on the surface, from the fact of their occurring *in place* in undisturbed posits; that they could not have reached such a depth by any natural eans; and that they must be of human origin, and not accidental formans, because as many as three had been discovered of a like character. is conclusion is that they are "true drift implements, fashioned and ed by a people far antedating the people who subsequently occupied this me territory."

After two years of further research he returned to the subject, publishing the same journal, in June, 1876, an account of the discovery of seven milar objects near the same locality. Of these he said: "My studies of ese palæolithic specimens and of their positions in the gravel-beds and erlying soil have led me to conclude that not long after the close of the st glacial epoch man appeared in the valley of the Delaware."[4]

Most of these specimens were deposited by Dr. Abbott in the Peabody useum of American Archæology and Ethnology at Cambridge, Massausetts; and the curator of that institution, Professor Frederick W.

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[1] Chamberlin, *Proc. Amer. Assoc.*, *ubi sup.*, p. 9.

[2] *The place of Niagara Falls in geological story*, by G. K. Gilbert, of the U. S. Govt. rv., in the *Proc. Amer. Assoc.*, *Ibid.* p. 223; *Geology of Minnesota* [final report], by N. H. Winchell and Warren Upham, vol. i. p. 337 (St. Paul, 1888).

[3] *The American Naturalist*, vol. vii. p. 204.

[4] *Ibid.* vol. x. p. 329.

Putnam, in September, 1876, visited the locality in company with I Abbott. Together they succeeded in finding two examples *in pla* Having been commissioned to continue his investigations, Dr. Abb presented to the trustees, in November of the same year, a detailed rep *On the Discovery of Supposed Palæolithic Implements from the Glac Drift in the Valley of the Delaware River, near Trenton, New Jerse* In this, three of the most characteristic specimens were figured, which h been submitted to Mr. M. E. Wadsworth of Cambridge, to determine th lithological character. He pronounced them to be made of argillite, a declared that the chipping upon them could not be attributed to a natural cause, and that the weathering of their surfaces indicated their ve great antiquity. The question "how and when these implements came be in the gravel" is discussed by Dr. Abbott at some length. He argu that the same forces which spread the beds of gravel over the wide a now covered carried them also; and he predicted that they will be met wi wherever such gravels occur in other parts of the State. He specially dwe upon the circumstances that the implements were found in *undisturb* portions of the freshly exposed surface of the bluff, and not in the mass talus accumulated at its base, into which they might have fallen from t surface; and that they have been found at great depths, "varying from fi to over twenty feet below the overlying soil." He also insisted upon t marked difference between their appearance and the materials of whi they are fashioned and the customary relics of the Indians. The conditio under which the gravel-beds were accumulated are then studied in conne tion with a report upon them by Professor N. S. Shaler, which conclud from the absence of stratification and of pebbles marked with glac scratches, that they were "formed in the sea near the foot of the retreati ice-sheet, when the sub-glacial rivers were pouring out the vast quantit of water and waste that clearly were released during the breaking up of t great ice-time." This view regards the deposits as of glacial origin, and laid down during that period, but considers that they were subsequen modified in their arrangement by the action of water. In such gravel-be there have also been found rolled fragments of reindeer-horns, and skulls the walrus, as well as the relics of man. Dr. Abbott accordingly drew t conclusion that "man dwelt at the foot of the glacier, or at least wande over the open sea, during the accumulation of this mass of gravel;" th he was contemporary of these arctic animals; and that this early race v driven southward by the encroaching ice, leaving its rude impleme behind. Thus it will be seen that Dr. Abbott no longer considers man this country as belonging to post-glacial, but to interglacial times.

Continuing his investigations, in the following year Dr. Abbott gav much more elaborate account of his work and its results, in which

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[1] *Tenth Annual Report of the Trustees of the Peabody Museum of American Archæology* *Ethnology*, vol. ii. p. 30.

nnounced his discovery of some sixty additional specimens.[1] To the bjection that had been raised, that these supposed implements might have een produced by the action of frost, he replied that a single fractured urface might have originated in that way or from an accidental blow; but hen we find upon the same object from twenty to forty planes of cleavage, ll equally weathered (which shows that the fragments were all detached t or about the same time), it is impossible not to recognize in this the esult of intentional action. Four such implements are described and gured, of shapes much more specialized than those previously published, nd resembling very closely objects which European archæologists style tone axes of "the Chellean type," whose artificial origin cannot be oubted.

THE TRENTON GRAVEL BLUFF.*

As some geologists were still inclined to insist upon the post-glacial haracter of the débris in which the implements were found, Dr. Abbott, dmitting that the great terminal moraine of the northern ice-sheet does ot approach nearer than forty miles to the bluff at Trenton, nevertheless nsists that the character of the deposits there much more resembles a nass of material accumulated in the sea at the foot of the glacier than it oes beds that have been subjected to the modifying arrangement of ater. He finds an explanation of this condition of things in a prolonga- ion of the glacier down the valley of the Delaware as far as Trenton, at a ime when the lower portions of the State had suffered a considerable depression, and before the retreat of the ice-sheet. But besides the comparatively unmodified material of the bluff, in which the greater portion of the palæolithic implements has been found, there also occur limited areas of stratified drift, such as are to be seen in railway cuttings near Trenton, in which similar implements are also occasionally found. These however, present a more worn appearance than the others. But it will be found that these tracts of clearly stratified material are so very limited in extent that they seem to imply some peculiar local condition of the glacier. This position is illustrated by certain remarkable effects once witnessed after a very severe rainfall, by which two palæolithic implements were brought into immediate contact with ordinary Indian relics such as are common on the surface. This leads to an examination of the question of the origin of this surface soil, and a discussion of the problem how true palæolithic implements sometimes occur in it. This soil is known to be a purely sedimentary deposit, consisting almost exclusively of sand, or of such finely comminuted gravels as would readily be transported by rapid currents of water. But imbedded in it and making a part of it are numerous huge boulders, too heavy to be moved by water. Dr. Abbott accounted for their presence from their having been dropped by ice-rafts, while the process of deposition of the soil was going on. The same sort of agency could not have put in place both the soil and the boulders contained in it and the same force which transported the latter may equally well have brought along such implements as occur in the beds of clearly stratified origin. The wearing effect upon these of gravels swept along by post-glacial floods will account for that worn appearance which sometimes almost disguises their artificial origin.

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[1] Second report on the palæolithic imple- ents from the glacial drift, in the valley of the Delaware River, near Trenton, New Jersey, *Ibid.* p. 225.

* From a photograph kindly furnished by Professor F. W. Putnam, showing the Delaware and its bluff of ravel, where many of the rude implements have been found.

In conclusion Dr. Abbott attempted to determine what was the early race which preceded the Indians in the occupation of this continent From the peculiar nature and qualities of palæolithic implements he argues that they are adapted to the needs of a people "living in a country of vastly different character, and with a different fauna," from the densely wooded regions of the Atlantic sea-board, where the red man found his home. The physical conditions of the glacial times much more nearly resembled those now prevailing in the extreme north. Accordingly he finds the descendants of the early race in the Eskimos of North America, driven northwards after contact with the invading Indian race. In this he is following the opinion of Professor William Boyd Dawkins, who considers that people to be of the same blood as the palæolithic cave-dwellers of southern France, and that of Mr. Dall and Dr. Rink, who believed that they once occupied this continent as far south as New Jersey. In confirmation of this view he asserts that the Eskimos "until recently used stone implements of the rudest patterns." But unfortunately for this theory the implements of the Eskimos bear no greater resemblance to palæolithic implements than do those of any other people in the later stone age; and subsequent discoveries of human crania in the Trenton gravels have led Dr. Abbott to question its soundness.[1]

These discoveries of Dr. Abbott are not liable to the imputation of possible errors of observation or record, as would be the case if they rested upon the testimony of a single person only. As has been already stated, in September, 1876, Professor Putnam was present at the finding *in place* of two palæolithic implements, and in all has taken five with his own hands from the gravel at various depths.[2] Mr. Lucien Carr also visited the locality in company with Professor J. D. Whitney, in September, 1878, and found several *in place*.[3] Since then Professors Shaler, Dawkins, Wright, Lewis, and others, including the writer, have all succeeded in finding specimens either in place or in the talus along the face of the bluff, from which they had washed out from freshly exposed surfaces of the gravel.[4] The whole number thus far discovered by Dr. Abbott amounts to about four hundred specimens.[5] Meanwhile, the problem of the conditions under which the Trenton gravels had been accumulated was made the subject of careful study by other competent geologists, besides Professor Shaler, to whose opinion reference has already been made. In October, 1877, the late Thomas Belt, F. G. S., visited the locality, and shortly afterwards published an account of Dr. Abbott's discoveries, illustrated by several geological sections of the gravel. His conclusion is, "that after the land-ice retired, or whilst it was retiring, and before the coast was submerged to such a depth as to permit the flotation of icebergs from the north, the upper pebble-beds containing the stone implements were formed."[6] The geologists of the New Jersey Survey had already recognized the distinction between the drift gravels of Trenton and the earlier yellow marine gravels which cover the lower part of the State. But it was the late Professor Henry Carvill Lewis, of Philadelphia, who first accurately described the character and limits of the Trenton gravels.[7] This he had carefully mapped before he was informed of Dr. Abbott's discoveries, and it has been found (with only one possible very recent exception) that the implements occur solely in these newer gravels of the glacial period.

Professor Lewis's matured conclusions in regard to the geological character and the age of the Trenton gravel cliff are thus expressed: "The presence of large boulders in the bluff at Trenton, and the extent and depth of the gravel at this place, have led to the supposition that there was here the extremity of a glacial moraine. Yet the absence of 'till' and of scratched boulders, the absence of glacial striæ upon the rocks of the valley, and the stratified character of the gravel, all point to water action alone as the agent of deposition. The depth of the gravel and the presence of the bluff at this point are explained by the peculiar position that Trenton occupies relatively to the river, . . . in a position where naturally the largest amount of a river gravel would be deposited, and where its best exposures would be exhibited. . . . Any drift material which the flooded river swept down its channel would here, upon meeting tide-water, be in great part deposited. Boulders which had been rolled down the inclined floor of the upper valley would here stop in their course, and all be heaped up with the coarser gravel in the more slowly flowing water, except such as cakes of floating ice could carry oceanward. . . . Having heaped up a mass of detritus in the old river channel as an obstruction at the mouth of the gorge, the river, so soon as its volume diminished, would immediately begin wearing away a new channel for itself down to ocean level. This would be readily accomplished through the loose material, and would be stopped only when rock was reached. . . . It has been thought that to account for the high bank at Trenton an elevation of the land must have occurred. . . . An increase in the volume of the river will explain all the facts. The accompanying diagram will render this more clear.

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[1] A complete account of Dr. Abbott's investigations will be found in his *Primitive Industry*, chap. 32 (Palæolithic Implements); *Tenth ann. rep. of Peabody Museum*, vol. ii. p. 30; *Eleventh Do., Ibid.* p. 225; *Proceedings of Boston Society of Natural History*, vol. xxi. p. 124; vol. xxiii. p. 424; *Proc. of Amer. Assoc. for Adv. of Science*, vol. xxxvii.

[2] *Proceedings of Boston Society of Natural History*, vol. xxi. p. 148.

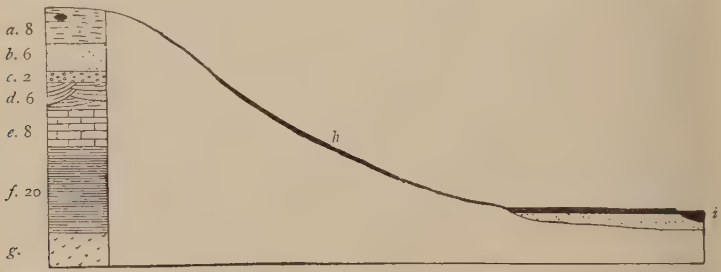
[3] *Twelfth annual report of Peabody Museum*, vol. ii. p. 489.

[4] *Proceedings of Boston Soc. of Nat. Hist., Ibid.* p. 132.

[5] *Popular Science Monthly*, January, 1889, p. 411.

[6] *On the discovery of stone implements in the glacial drift of North America*, in the *Quart. Journ. of Science* (London, January, 1878), vol. xv. p. 68.

[7] *The Trenton gravel and its relation to the antiquity of man*, in the *Proceedings of the Academy of Natural Sciences of Philadelphia*, 1880, p. 296.



Section of bluff two miles south of Trenton, New Jersey. *a b*, TRENTON GRAVEL; Implements — *a*, fine gray sand (boulder); *b*, coarse sandy gravel; *c*, red gravel; *d*, yellow gravel (pre-glacial); *e*, plastic clay (Wealden); *f*, fine yellow sand (Hastings ?); *g*, gneiss; *h*, alluvial mud; *i*, Delaware River.*

"The Trenton gravel, now confined to the sandy flat borders of the river, corresponds to the 'intervale' of New England rivers, . . . and exhibits a topography peculiar to a true river gravel. Frequently instead of forming a flat plain it forms higher ground close to the present river channel than it does near its ancient bank. Moreover, not only does the ground thus slope downward on retreating from the river, but the boulders become smaller and less abundant. Both of these facts are in accordance with the facts of river deposits. In time of flood the rapidly flowing water in the main channel, bearing detritus, is checked by the more quiet waters at e side of the river, and is forced to deposit its gravel and boulders as a nd of bank. . . . Having shown that the Trenton gravel is a true river avel of comparatively recent age, it remains to point out the relation it ears to the glacial epoch. . . . Two hypotheses only can be applied to the renton gravel. It is either *post*-glacial, or it belongs to the very last poron of the glacial period. The view held by the late Thomas Belt can no nger be maintained. . . . He fails to recognize any distinction between e gravels. As we have seen, the Trenton gravel is truly post-glacial. It ly remains to define more strictly the meaning of that term. There is idence to support both of these hypotheses."[1]

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* From a cut in *Primitive Industry*, p. 535.

After discussing them both at considerable length, he concludes as follws: "A second glacial period in Europe, known as the 'Reindeer Period,' s long been recognized. It appears to have followed that in which the ays were deposited and the terraces formed, and may therefore correond with the period of the Trenton gravel. If there have been two glacial ochs in this country, the Trenton gravel cannot be earlier than the close the later one. If there has been but one, traces of the glacier must ve continued into comparatively recent times, or long after the period of bmergence. The Trenton gravel, whether made by long-continued floods hich followed a first or second glacial epoch, — whether separated from all ue glacial action or the result of the glacier's final melting, — is truly a st-glacial deposit, but still a phenomenon of essentially glacial times, — nes more nearly related to the Great Ice Age than to the present."

He then goes on to consider the bearings of the age of this gravel upon e question of the antiquity of man. "When we find that the Trenton avel contains implements of human workmanship so placed with referce to it that it is evident that at or soon after the time of its deposition an had appeared on its borders, and when the question of the antiquity man in America is thus before us, we are tempted to inquire still further to the age of the deposit under discussion. It has been clearly shown several competent archæologists that the implements that have been und are a constituent part of the gravel, and not intrusive objects. It s of peculiar interest to find that it has been only within the limits of e Trenton gravel, precisely traced out by the writer, that Dr. Abbott, ofessor F. W. Putnam, Mr. Lucien Carr, and others, have discovered ese implements *in situ*. . . . At the localities on the Pennsylvania Railad, where extensive exposures of these gravels have been made, the desit is undoubtedly undisturbed. No implements could have come into is gravel except at a time when the river flowed upon it, and when they ight have sunk through the loose and shifting material. All the evidence ints to the conclusion that at the time of the Trenton gravel flood man . . lived upon the banks of the ancient Delaware, and lost his stone imements in the shifting sands and gravel of the bed of that stream. . . . he actual age of the Trenton gravel, and the consequent date to which the antiquity of man on the Delaware should be assigned, is a questio which geological data alone are insufficient to solve. The only clew, an that a most unsatisfactory one, is afforded by calculations based upon th amount of erosion. This, like all geological considerations, is relativ rather than absolute, yet several calculations have been made, which, base either upon the rate of erosion of river channels or the rate of accumulation of sediment, have attempted to fix the date of the close of the glacia epoch. By assuming that the Trenton gravel was deposited immediatel after the close of this epoch, an account of such calculations may be c interest. If the Trenton gravel is *post*-glacial in the widest acceptation c the term, a yet later date must be assigned to it."

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[1] *Primitive Industry*, p. 533 *et seq.*

After going carefully through them all, he concludes: "Thus we fin that if any reliance is to be placed upon such calculations, even if w assume that the Trenton gravel is of glacial age, it is not necessary t make it more than ten thousand years old. The time necessary for th Delaware to cut through the gravel down to the rock is by no means grea When it is noted that the gravel cliff at Trenton was made by a side wea ing away at a bank, and when it is remembered that the erosive power c the Delaware River was formerly greater than at present, it will be concede that the presence of the cliff at Trenton will not necessarily infer its hig antiquity; nor in the character of the gravel is there any evidence that th time of its deposition need have been long. It may be that, as investigations are carried further, it will result not so much in proving man of ver great antiquity as in showing how much more recent than usually suppose was the final disappearance of the glacier."

Professor Lewis's studies of the great terminal moraine of the norther ice-sheet were still further prosecuted in conjunction with Professor Georg Frederick Wright, of Oberlin, Ohio, whose labors have been of the highe importance in shedding light upon the question of the antiquity of man i America.[1] Together they traced the southern boundary of the glacial r gion across the State of Pennsylvania, and subsequently Professor Wrigh has continued his researches through the States of Ohio, Indiana, an Kentucky, as far as the Mississippi River and even beyond. He has foun that glacial floods similar to those of the Delaware valley have deposite similar beds of drift gravel in the valleys of all the southerly flowing river and he has called attention to the importance of searching in them fc palæolithic implements. As early as March, 1883, he predicted that trace of early man would be found in the extensive terraces and gravel deposi of the southern portion of Ohio.[2] This prediction was speedily fulfille and upon November 4, 1885, Professor Putnam reported to the Bosto Society of Natural History that Dr. C. L. Metz, of Madisonville, Ohio, ha found in the gravels of the valley of the Little Miami River, at that plac eight feet below the surface, a rude implement made of black flint, of about he same size and shape as one of the same material found by Dr. Abbott n the Trenton gravels. This was followed by the announcement from Dr. Metz that he had discovered another specimen (a chipped pebble) in the gravels at Loveland, in the same valley, at a depth of nearly thirty feet rom the surface. Professor Wright has visited both localities, and given detailed description of them, illustrated by a map. He finds that the leposit at Madisonville clearly belongs to the glacial-terrace epoch, and is nderlain by "till," while in that at Loveland it is known that the bones of the mastodon have been discovered. He closes his account with these words: "In the light of the exposition just given, these implements will at once be recognized as among the most important archæological discoveries yet made in America, ranking on a par with those of Dr. Abbott at Trenton, New Jersey. They show that in Ohio, as well as on the Atlantic coast, man was an inhabitant before the close of the glacial period."[1] Further confirmation of these predictions was received at the meeting of he American Association for the Advancement of Science, at Cleveland, Ohio, in August, 1888, when Mr. Hilborne T. Cresson reported his discovery of a large flint implement in the glacial gravels of Jackson County, ndiana, as well as of two chipped implements made of argillite, which he ad found *in place* at a depth of several feet in the ancient terrace of the Delaware River, in Claymont, Newcastle County, Delaware.[2]

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[1] The bibliography of Professor Wright's publications upon this subject will be found in *Pr* *Boston Soc. of Nat. Hist.*, vol. xxiii. p. 427.

[2] *Science*. vol. i. p. 271.

This discovery of Mr. Cresson's has assumed a great geological imporance, and it is thus reported by him: "Toward midday of July 13, 1887, while lying upon the edge of the railroad cut, sketching the boulder line, ny eye chanced to notice a piece of steel-gray substance, strongly relieved n the sunlight against the red-colored gravel, just above where it joined he lower grayish-red portion. It seemed to me like argillite, and being irmly imbedded in the gravel was decidedly interesting. Descending the teep bank as rapidly as possible, the specimen was secured. . . . Upon xamining my specimen I found that it was unquestionably a chipped implenent. There is no doubt about its being firmly imbedded in the gravel, for he delay I made in extricating it with my pocket-knife nearly caused me he unpleasant position of being covered by several tons of gravel. . . . Having duly reported my find to Professor Putnam, I began, at his request, thorough examination of the locality, and on May 25, 1888, the year ollowing, discovered another implement four feet below the surface, at a lace about one eighth of a mile from the first discovery. . . . The geoogical formation in which the implement was found seems to be a reddish ravel mixed with schist."[3]

Professor Wright thus comments upon these discoveries and their geo-

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[1] *Proc. Boston Soc. of Nat. Hist.*, vol. xxiii. . 435.

[2] *Proc. Amer. Assoc. for Adv. of Science*, vol. xxvii.

[3] Early Man in the Delaware Valley, in the *Proc. Boston Soc. of Nat. Hist.*, vol. xxiv.

logical situation : "The discovery of palæolithic implements, as describ
by Mr. Cresson, near Claymont, Del., unfolds a new chapter in the histo
of man in America. It was my privilege in November last to visit the sp
with him, and to spend a day examining the various features of the localit
. . . The cut in the Baltimore and Ohio railroad in which this impleme
was found is about one mile and a half west of the Delaware River, a
about one hundred and fifty feet above it. The river is here quite broa
Indeed, it has ceased to be a river, and is already merging into Delawa
Bay ; the New Jersey shore being about three miles distant from the Del
ware side. The ascent from the bay at Claymont to the locality under co
sideration is by three or four well-marked benches. These probably a
not terraces in the strict sense of the word, but shelves marking differe
periods of erosion when the land stood at these several levels, but no
thinly covered with old river deposits. Upon reaching the locality of M
Cresson's recent discovery, we find a well-marked superficial water depos
containing pebbles and small boulders up to two or three feet in diamete
and resting unconformably upon other deposits, different in character, a
in some places directly upon the decomposed schists which characterize t
locality. This is without question the Philadelphia Red Gravel and Bric
Clay of Lewis. The implement submitted to us was found near the bo
tom of this upper deposit, and eight feet below the surface. . .. . As M
Cresson was on the ground when the implement was uncovered, and too
it out with his own hands, there would seem to be no reasonable doubt th
it was originally a part of the deposit ; for Mr. Cresson is no novice in the
matters, but has had unusual opportunities, both in this country and in t
old world, to study the localities where similar discoveries have heretofo
been made. The absorbing question concerning the age of this deposit
therefore forced upon our attention as archæologists. . . . The determin
tion of the age of these particular deposits at Claymont involves a di
cussion of the whole question of the Ice Age in North America, and esp
cially that of the duality of the glacial epoch. At a meeting of this socie
on January 19, 1881, I discussed the age of the Trenton gravel, in whic
Dr. Abbott has found so many palæoliths, and was led also incidentally
the same time to discuss the relative age of what Professor Lewis called t
Philadelphia Red Gravel. I had at that time recently made repeated tri
to Trenton, and with Professor Lewis had been over considerable portions
the Delaware valley for the express purpose of determining these question
The conclusions to which we — that is, Professor Lewis and myself — ca
were thus expressed in the paper above referred to (*Proc. Boston Soc.*
Nat. Hist., vol. xxi. pp. 137–145), namely, that the Philadelphia Brick Cl
and Red Gravel (which are essentially one formation) marked the peri
when the ice had its greatest extension, and when there was a considerab
depression of the land in that vicinity ; perhaps, however, less than a hu
dred feet in the neighborhood of the moraine, though increasing towar
the northwest. During this period of greatest extension and depressio

the Philadelphia Red Gravel and Brick Clay were deposited by the ice-laden floods which annually poured down the valley in the summer seasons. As the ice retreated towards the headwaters of the valley, the period was marked also by a reëlevation of the land to about its present height, when the later deposits of gravel at Trenton took place. Dr. Abbott's discoveries at Trenton prove the presence of man on the continent at that stage of the glacial epoch. Mr. Cresson's discoveries prove the presence of man at a far earlier stage. How much earlier, will depend upon our interpretation of the general facts bearing on the question of the duality of the glacial epoch.

"Mr. McGee, of the United States Geological Survey, has recently published the results of extensive investigations carried on by him respecting the superficial deposits of the Atlantic coast. (See *Amer. Jour. of Science*, vol. xxxv., 1888.) He finds that on all the rivers south of the Delaware there are deposits corresponding in character to what Professor Lewis had denominated Philadelphia Red Gravel and Brick Clay. . . . From the extent to which this deposit is developed at Washington, in the District of Columbia, Mr. McGee prefers to designate it the Columbia formation. But the period is regarded by him as identical with that of the Philadelphia Red Gravel and Brick Clay, which Professor Lewis had attributed to the period of maximum glacial development on the Atlantic coast.

"It is observable that the boulders in this Columbia formation belong, so far as we know, in every case, to the valleys in which they are now found. . . . It is observable also that it is not necessary in any case to suppose that these deposits were the direct result of glacial ice. Mr. McGee does not suppose that glaciers extended down these valleys to any great distance. Indeed, so far as we are aware, there is no evidence of even local glaciers in the Alleghany Mountains south of Harrisburg. But it is easy to see that an incidental result of the glacial period was a great increase of ice and snow in the headwaters of all these streams, so as to add greatly to the extent of the deposits in which floating ice is concerned. And this Columbia formation is, as we understand it, supposed by Mr. McGee to be the result of this incidental effect of the glacial period in increasing the accumulations of snow and ice along the headwaters of all the streams that rise in the Alleghanies. In this we are probably agreed. But Mr. McGee differs from the interpretation of the facts given by Professor Lewis and myself, in that he postulates, largely, however, on the basis of facts outside of this region, two distinct glacial epochs, and attributes the Columbia formation to the first epoch, which he believes to be from three to ten times as remote as the period in which the Trenton gravels were deposited. If, therefore, Dr. Abbott's implements are, as from the lowest estimate would seem to be the case, from ten thousand to fifteen thousand years old, the implements discovered by Mr. Cresson in the Baltimore and Ohio cut at Claymont, which is certainly in Mr. McGee's Columbia formation, would be from thirty thousand to one hundred and fifty thousand years old.

"But as I review the evidence which has come to my knowledge since writing the paper in 1881, I do not yet see the necessity of making so complete a separation between the glacial epochs as Mr. McGee and others feel compelled to do. But, on the other hand, the unity of the epoch (with, however, a marked period of amelioration in climate accompanied by extensive recession of the ice, and followed by a subsequent re-advance over a portion of the territory) seems more and more evident. All the facts which Mr. McGee adduces from the eastern side of the Alleghanies comport, apparently, as readily with the idea of one glacial period as with that of two. . . . Until further examination of the district with these suggestions in view, or until a more specific statement of facts than we find in Mr. McGee's papers, it would therefore seem unnecessary to postulate a distinct glacial period to account for the Columbia formation. . . . But no matter which view prevails, whether that of two distinct glacial epochs, or of one prolonged epoch with a mild period intervening, the Columbia deposits at Claymont, in which these discoveries of Mr. Cresson have been made, long antedate (perhaps by many thousand years) the deposits at Trenton, N. J., at Loveland and Madison, Ohio, at Little Falls, Minn., . . . and at Medora, Ind. . . . Those all belong to the later portion of the glacial period, while these at Claymont belong to the earlier portion of that period, if they are not to be classed, according to Mr. McGee, as belonging to an entirely distinct epoch."[1]

The objects discovered by both Dr. Metz and Mr. Cresson have been deposited in the Peabody Museum at Cambridge, and their artificial character cannot be disputed.

At nearly the same date at which Dr. Abbott published the account of his discoveries, Col. Charles C. Jones, of Augusta, Georgia, recorded the finding of "some rudely-chipped, triangular-shaped implements in Nacoochee valley under circumstances which seemingly assign to them very remote antiquity. In material, manner of construction, and in general appearance, so nearly do they resemble some of the rough, so-called flint hatchets belonging to the drift type, as described by M. Boucher de Perthes, that they might very readily be mistaken the one for the other."[2] They were met with in the course of mining operations, in which a cutting had been made through the soil and the underlying sands, gravels, and boulders down to the bed-rock. Resting upon this, at a depth of some nine feet from the surface, were the three implements described. But it is plain that this deposit can scarcely be regarded as a true glacial drift, since the great terminal moraine lies more than four hundred miles away to the north, and the region where it occurs does not fall within the drift area. It must be of local origin, and few geologists would be willing to admit the xistence of local glaciers in the Alleghanies so far to the south during the acial period. Consequently these objects do not fall within our definition f true palæolithic implements.

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[1] The Age of the Philadelphia Red Gravel, *Proc. Boston Soc. of Nat. Hist.*, vol. xxiv.

[2] *Antiquities of the Southern Indians*, p. 293. The preface of this volume is dated "New York, April 10, 1873." In an article in the *North American Review* for January, 1874 (vol. cxviii. p. 70), on "The Antiquity of the North American Indians," he traces that race back to palæolithic times.

The same thing may be said in a less degree of the implements discov- red by C. M. Wallace, in 1876, in the gravels and clays of the valley of e James River.[1]

A different character attaches to certain objects discovered in 1877 by rofessor N. H. Winchell, at Little Falls, Minnesota, in the valley of the lississippi River.[2] These consisted mainly of pieces of chipped white uartz, perfectly sharp, although occurring in a water-worn deposit, and ey were found to extend over quite a large area. Their artificial char- cter has been vouched for by Professor Putnam, and among them were a w rude implements which are well represented in an accompanying plate. geological section given in the report shows that they occur in the terrace me sixty feet above the bank of the river, and were found to extend about ur feet below the surface. In the words of Professor Winchell: “The terest that centres in these chips . . . involves the question of the age of an and his work in the Mississippi Valley. . . . The chipping race . . . receded the spreading of the material of the plain, and must have been reglacial, since the plain was spread out by that flood stage of the Missis- ppi River that existed during the prevalence of the ice-period, or resulted om the dissolution of the glacial winter. . . . The wonderful abundance f these chips indicates an astonishing amount of work done, as if there ad been a great manufactory in the neighborhood, or an enormous lapse f time for its performance.”

This discovery of Professor Winchell was followed up by researches rosecuted in 1879 in the vicinity of Little Falls by Miss F. E. Babbit, of at place.[3] She discovered a similar stratum of chipped quartz in the ncient terrace, of a mile or more in width, about forty rods to the east of e river, and elevated some twenty-five feet above it. This had been rought to light by the wearing of a wagon track, leading down a natural rainage channel, which had cut through the quartz stratum down to a vel below it. The result of her prolonged investigations showed that “the ratum of quartz chips lay at a level some twelve or fifteen feet lower than e plane of the terrace top.”[4] While the quartz chips discovered by Pro- ssor Winchell were contained in the upper surface of the terrace plain, these were strictly confined to a lower level, and cannot be synchronou with them. They must be older "by at least the lapse of time require for the deposition of the twelve or fifteen feet of modified drift formi the upper part of the terrace plain above the quartz-bearing stratum."

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[1] *Flint implements from the stratified drift of e vicinity of Richmond, Va.*, in the *Amer- an Journal of Science* (3d series), vol. xi. 195; quoted in Dana's *Manual of Geology*, 578.

[2] *Sixth annual report of the Geological and atural History Survey of Minnesota*, 1877, p.

[3] Her paper on “Ancient quartz-workers and eir quarries in Minnesota,” read before the innesota Historical Society, February, 1880, was reprinted in *The American Antiquarian*, vol. iii. p. 18.

[4] *Vestiges of Glacial Man in Central Minnesota*, in the *Proc. Amer. Assoc. for Adv. of Science*, vol. xxxii. p. 385. A more extended account of her researches will be found under the same title in the *American Naturalist* for June and July, 1884 (vol. xviii. pp. 594 and 697). On p. 705 the writer has given at some length his opinion in regard to the artificial character of these quartz objects.

This conclusion is abundantly confirmed by Mr. Warren Upham, of t U. S. Geological Survey, in his study of "The recession of the ice-she in Minnesota in its relation to the gravel deposits overlying the quartz i plements found by Miss Babbit at Little Falls, Minnesota."[1] The gre ice-sheet of the latest glacial epoch at its maximum extension pushed o vast lobes of ice, one of which crossed western and central Minnesota a extended into Iowa. Different stages of its retreat are marked by elev distinct marginal moraines, and this deposit of modified drift at Little Fa Mr. Upham believes occurred in the interval between the formation of t eighth and the ninth. "It is," he says, "upon the till, or direct deposit the ice, and forms a surface over which the ice never re-advanced." A examination of the terraces and plains of the Mississippi Valley from S Paul to twenty-five miles above Little Falls shows them to be similar composition and origin to the terraces of modified drift in the river valle of New England. In his judgment, "the rude implements and fragmen of quartz discovered at Little Falls were overspread by the glacial floo plain of the Mississippi River, while most of the northern half of Minn sota was still covered by the ice. . . . It may be that the chief cau leading men to occupy this locality so soon after it was uncovered fro the ice was their discovery of the quartz veins in the slate there, . . . affor ing suitable material for making sharp-edged stone implements of the be quality. Quartz veins are absent, or very rare and unsuitable for this, all the rock outcrops of the south half of Minnesota, that had become u covered from the ice, as well as of the whole Mississippi basin southwar and this was the first spot accessible whence quartz for implement-maki could be obtained."

According to this view the upper deposit at Little Falls would appear be more recent than those laid down by the immediate wasting of t great terminal moraine at Trenton and in Ohio; but the occupation the spot by man upon the lower terrace may well have been at a mu earlier time.

Many of the objects discovered by Miss Babbitt have been placed in t Peabody Museum, and as their artificial character has been questioned, t writer wishes to repeat his opinion, formed upon the study of numero specimens that have been submitted to him, but not the same as those up which Professor Putnam based his similar conclusions, that they are u doubtedly of human origin.

Implements of palæolithic form have been discovered in several oth localities, but as none of them have been found *in place*, in undisturb gravel-beds, either those which have been derived from the termin moraine of the second extension of the great northern ice-sheet, or those which are included within the drift area, they cannot be considered as proved to be true palæolithic implements, although it is highly probable that many of them are such.[1]

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[1] *Proc. of Boston Soc. of Nat. Hist.*, vol. xxiii. p. 436.

We have now to consider the claim to high antiquity of objects which have been discovered in several places in certain deposits, equally regarded as of glacial origin, which occur in the central and western portions of the United States. These are the so-called "lacustrine deposits," which are believed to have had their origin from the former presence of vast lakes, now either extinct or represented by comparatively small bodies of water. The largest of such lakes occupied a great depression which once existed between the Rocky Mountains and the chain of the Sierra Nevada during the quaternary period. The existing lakes represent the lowest part of two basins, into which this depression was divided; of these, the western one, represented by certain smaller lakes, has received the name of Lake Lahontan. This never had any communication with the sea, and its deposits consequently register the greater or less amount of rain and snow during the period of its existence. To the eastern the name of Lake Bonneville has been given, and it is at present represented by the Great Salt Lake in Utah. This formerly had an outlet through the valley of the Columbia River. These lakes are believed to have been produced by the melting of local glaciers existing during the quaternary times in the above-named mountains; and similar consequences seem to have followed from the like presence of ancient glaciers in the Wahsatch and Uintah mountains, where no lake now exists.

In the ancient deposits of such an immense fresh-water lake, derived from the melting of glaciers in the last-mentioned mountains, which once existed in southern Wyoming, Professor Joseph Leidy first reported, in 1872, the discovery near Fort Bridger of "mingled implements of the rudest construction, together with a few of the highest finish. . . . Some of the specimens are as sharp and fresh in appearance as if they had been but recently broken from the parent block. Others are worn and have their sharpness removed, and are so deeply altered in color as to look exceedingly ancient."[2] The plates accompanying the report show that some of these objects are of palæolithic form, but as no further information is given in regard to the conditions under which they were discovered, we cannot pronounce them to be really palæolithic.

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[1] In 1877, by Professor S. S. Haldeman on an island in the Susquehanna River, in Lancaster Co., Penn. (*Eleventh Rep. Peabody Mus.*, vol. ii. p. 255). In 1878, by A. F. Berlin in the Schuylkill Valley, at Reading, Penn. (*American Antiquarian*, vol. i. p. 10). In 1879, by Dr. W. J. Hoffman in the valley of the Potomac, near Washington (*American Naturalist*, vol. xiii. p. 108). Subsequently by others in the same vicinity, reported by S. V. Proudfit in *The American Anthropologist*, vol. i. p. 337. By David Dodge at Wakefield, Mass., and by Mr. Frazer at Marshfield, Mass. (*Proc. of Boston Soc. of Nat. Hist.*, vol. xxi. pp. 123 and 450). By the writer, in several localities in New England (*Ibid.* p. 382).

[2] *Sixth annual report of the U. S. Geological Survey of the Territories*, by F. V. Hayden (1873), p. 652.

In 1874, Dr. Samuel Aughey made known the existence in Nebraska of "hundreds of miles of similar lacustrine deposits, almost level or gently rolling."[1] To these the name of "loess" has also been given, as well as to the mud deposits derived from the northern drift. Aughey states that these beds are perfectly homogeneous throughout, and of almost uniform color, ranging in thickness from five to one hundred and fifty feet. Generally they lie above a true drift formation derived from glaciers in the Black Hills, and represent "the final retreat of the glaciers, and that era of depression of the surface of the State when the greater part of it constituted a great fresh-water lake, into which the Missouri, the Platte, and the Republican rivers poured their waters." The Missouri and its tributaries, flowing for more than one thousand miles through these deposits, gradually filled up this great lake with sediment. The rising of the land by degrees converted the lake-bottom into marshes, through which the rivers began to cut new channels, and to form the bluffs which now bound them. "The Missouri, during the closing centuries of the lacustrine age, must have been from five to thirty miles in breadth, forming a stream which for size and majesty rivalled the Amazon." Many remains of mastodons and elephants are found in this so-called loess, as well as those of the animals now living in that region, together with the fresh-water and land shells peculiar to it. In it Aughey has also discovered an arrow-point and a spear-head, of which he gives well-executed figures. Both are excellent examples of those well-chipped implements which are regarded as typical of the Neolithic age or the age of polished stone, and are absolutely different from the palæolithic implements of which we have hitherto spoken. They were both found in railroad cuttings on the Iowa side of the Missouri River, and within three miles of it. The first lay at a depth of fifteen feet below the top of the deposit. Of the second he says it was "twenty feet below the top of the loess, and at least six inches from the edge of the cut, so that it could not have slid into that place. . . . Thirteen inches above the point where it was found, and within three inches of being on a line with it, in undisturbed loess, there was a lumbar vertebra of an elephant."[2]

This intermingling in these deposits of the bones of extinct and living animals appears to have been brought about by the shifting of the beds of the vast rivers he has described, which have been flowing for ages through the slight and easily moved material. It seems to be analogous to what has taken place in recent times in the valley of the Mississippi and in its delta. The finding, therefore, of arrow-heads of recent Indian type, even *in place* under twenty feet of loess and below a fossil elephant-bone, cannot be considered as affording any stronger proof of the antiquity of man than the oft-cited instances of the discovery of basket-work and pottery underneath similar fossils at Petit Anse Island in Louisiana, or of pottery and mastodon-bones on the banks of the Ashley River in South Carolina. No such discovery can be considered of consequence as bearing upon the question of palæolithic man.

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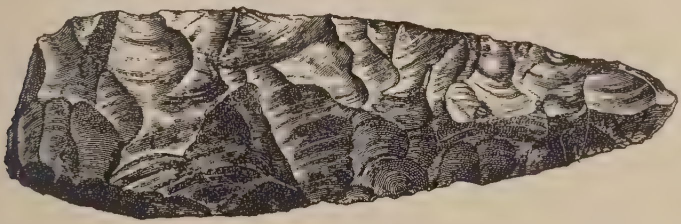
[1] *Ibid.* (1874), p. 247.

[2] *Ibid.* p. 254.

The late Thomas Belt wrote to Professor Putnam, in 1878, that he had liscovered "a small human skull in an undisturbed loess in a railway cutting ibout two miles from Denver (Colorado). All the plains are covered with drift deposit of granitic and quartzose pebbles overlaid by a sandy and alcareous loam closely resembling the diluvial clay and the loess of Europe. It was in the upper part of the drift series that I found the skull. ust the tip of it was visible in the cutting about three and one half feet elow the surface."[1] Not long after this Mr. Belt died, and we are without urther information in regard to the locality. It would seem, however, hat the loess in which the skull occurred belongs to the latest in the acustrine series, and consequently does not imply any very great antiquity or it.

In 1882 Mr. W. J. McGee, of the U. S. Geological Survey, obtained rom the upper lacustral clays of the basin of the ancient Lake Lahontan, vhere they are exposed in the walls of Walker River Cañon, a spear-head, nade of obsidian, beautifully chipped, and perfectly resembling those found n the surface throughout the southwest. "It was discovered projecting oint outwards from a vertical scarp of lacustral clays twenty-five feet below he top of the section, at a locality where there were no signs of recent listurbance."[2] This is said to have been "associated in such a manner vith the bones of an elephant or mastodon as to leave no doubt of their aving been buried at approximately the same time." But we are also told hat these lakes are of very recent date, and that they have "left the very atest of all the complete geological records to be observed in the Great Basin."[3] The fossil shells obtained from these deposits all belong to iving species; while the mammalian remains, which have been found in nly very limited numbers, and all, with a single exception, in the upper eds, "are the same as occur elsewhere in tertiary or quaternary strata." Mr. McGee says: "If the obsidian implement . . . was really *in situ* (as ll appearances indicated), it must have been dropped in a shallow and



OBSIDIAN SPEAR-HEAD.*

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[1] *Eleventh Report of Peabody Museum*, p. 257.

[2] *Geological History of Lake Lahontan, a qua-ernary lake of northwestern Nevada*, by I. C. Russell, being *Monog.* No. xi. *U. S. Geol. Surv.* under J. W. Powell, p. 247 (Washington, 1885).

[3] *Ibid.* p. 269.

* Found in the Lahontan sediments, — from a cut in Russell's *Lake Lahontan*, monograph xi. of Powell's *J. S. Geological Survey*, p. 247.

quiet bay of the saline and alkaline Lake Lahontan, and gradually buried beneath its fine mechanical deposits and chemical precipitates."[1]

In Mr. Russell's opinion, this single implement, although supported by no other finds of a similar character, is sufficient to prove that "man inhabited this continent during the last great rise of the former lake." But if this last great rise occurred in recent times, the presence of the bones of tertiary mammals in the upper beds shows that great natural forces must have been in operation at that time to have washed these out of their original place of deposit. The principal organic remains found, we are told, are those of living shells, and the intermingling of these with the bones of tertiary mammals could scarcely have taken place in "shallow and quiet bays." To the writer this discovery seems rather to prove that an Indian spear-head was in some manner washed down and buried in the clays of the Walker River Cañon than that man was the contemporary there of the tertiary or quaternary mammalia. This fairly seems to be a case where, in the language of Dr. Brinton, "Archæology may at times correct Geology."[2]

It is almost paralleled by the discovery made by Mr. P. A. Scott, in Kansas, of a broken knife or lance-head, measuring in its present condition two inches and one eighth in length. Sir Daniel Wilson, who reports it, says: "The spot where the discovery was made is in the Blue Range of the Rocky Mountains, in an alluvial bottom, and distant several hundred feet from a small stream called Clear Creek. A shaft was sunk, passing through four feet of rich, black soil, and below this through upward of ten feet of gravel, reddish clay, and rounded quartz. Here the flint was found. . . . The actual object corresponds more to the small and slighter productions of the modern Indian tool-maker than to the rude and massive drift implement." But this most careful and conscientious observer goes on to remark, "Under any circumstances it would be rash to build up comprehensive theories on a solitary case like this."[3]

If the discovery by Mr. McGee of this spear-head be insisted upon as establishing that man inhabited this continent during the last great rise of the lake, it would be easier to believe that that event occurred in recent and not in quaternary times, than to admit that the distinction between palæolithic and neolithic implements, established by so many discoveries in this country and in Europe, is thereby utterly overthrown.

The only alternative left is to believe that neolithic man was the contemporary of the tertiary mammals. To this conclusion we are asked to come by Professor Josiah D. Whitney, on account of the discovery of the remains of man and of his works in the auriferous gravels of California. The famous "Calaveras skull" is figured upon another page of this volume,

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[1] *Pop. Science Monthly*, November, 1888, p. 27.

[2] Article in the *Iconographic Encyclopædia*, on Prehistoric Archæology, by Daniel G. Brinton, vol. ii. p. 63 (Philadelphia, 1886).

[3] *Smithsonian Report*, 1862, p. 297, where it is figured; and repeated in his *Prehistoric Man*, vol. i. p. 45.

ere the circumstances attending its discovery are briefly referred to.[1]
is astonishing to see how frail is the foundation upon which such a
rprising superstructure has been raised, as it is found set forth in detail
the section entitled *Human remains and works of art of the gravel series,*
the third chapter of Professor Whitney's memoir on *The auriferous*
avels of the Sierra Nevada of California.[2] All is hearsay testimony, and
tirely uncontrolled by any such careful scrutiny as marks the work of
e British Association in the explorations carried on for fifteen years at
ent's Hole, near Torquay. There can be no question that human bones
d human implements have often been discovered in these gravels, but
cording to the accounts as given these are mingled in them in inextricable
nfusion. ,What is the character of these objects of human workmanship?
far are they from being, as Professor Whitney describes them, "always
e same kind of implements, . . . namely, the coarsest and the least
ished which one would suppose could be made and still be implements."
ne account speaks of "a spear or lance head of obsidian, five inches long
d one and a half broad, quite regularly formed." Others mention "spear
d arrow heads made of obsidian;" or "certain discoidal stones from
ree to four inches in diameter, and about an inch and a half thick, con-
ve on both sides, with perforated centre." Still another witness speaks
"a large stone bead, made perhaps of alabaster, about one and a half
ches long and about one and one fourth inches in diameter, with a hole
rough it one fourth of an inch in size." We are also told of a "stone
tchet of a triangular shape, with a hole through it for a handle, near the
iddle. Its size was four inches across the edge, and length about six
ches." So also oval stones with continuous "grooves cut around them,"
d "grooved oval disks," are more than once mentioned. We think these
otations will be sufficient to convince the archæologist that here is no
estion of palæolithic implements, but that we have to do simply with the
mmon Indian objects found on the surface all over our country. Besides
e rude cuts in Bancroft,[3] I know of only one example of these California
scoveries which has been figured. This is the "beautiful relic" described
Mr. J. W. Foster, of which he says: "When we consider its symmetry
form . . . and the delicate drilling of the hole through a material so
ble to fracture, we are free to say it affords an exhibition of the lapidary's
ill superior to anything yet furnished by the Stone age of either conti-
nt."[4] Mr. Foster doubtfully suggests that this object was "used as a
ummet for the purpose of determining the perpendicular to the horizon."
has been shown, however, by Mr. W. H. Henshaw, that among the
dians of Southern California similar objects have long been used by
eir medicine-men as "medicine or sorcery stones."[5] Whichever may

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[1] See p. 385 of this volume.

[2] *Memoirs of Mus. of Comp. Zoölogy at Harv.*
llege, vol. vi. pp. 258–288 (Cambridge, 1880).

[3] The *Native Races of the Pacific States of*
orth America, by H. H. Bancroft, vol. iv. pp.
9–707.

[4] *Transactions* of the Chicago Academy of Sciences, vol. i. p. 232, pl. xxii, fig. 3.

[5] *The aboriginal relics called "sinkers" or "plummets"* in *Amer. Journal of Archæology,* vol. i. p. 105.

be held to be the true explanation of its use, either is more likely to be characteristic of the Indian race than of primitive man.

But the objects whose presence in the gravels is most repeatedly spok of are stone mortars, which Professor Whitney supposes were "used the race inhabiting this region in prehistoric times . . . for providing food One of these is stated to have been "found standing upright, and th pestle was in it, in its proper place, apparently just as it had been left the owner." It was taken out of a shaft, according to the testimon twelve feet underneath undisturbed strata. This was certainly a ve marvellous thing to have happened if all the objects found in the grave are supposed to have been brought there by the action of floods of wate But it is a very simple matter, if the supposition of Mr. Southall be correc who thinks that "these mortars have been left in these positions by th ancient inhabitants in their search for *gold*."[1] The Spaniards found go in abundance in Mexico, and the locality from which it came is believed Mr. Southall to be indicated by a discovery made in 1849 by some gol diggers at one of the mountain diggings called Murphy's, in the region which Professor Whitney's discoveries have taken place. In examining high barren district of mountain, they were surprised to come upon th abandoned site of an ancient mine. At the bottom of a shaft two hundre and ten feet deep a human skeleton was found, with an altar for worsh and other evidences of ancient labor by the aborigines.[2] Mr. Southa believes that these mortars were used "for crushing the cemented grav of the auriferous beds." Some corroboration is afforded for this suggestio by the fact that stone mortars of a like character are found in the ancie gold mines, worked by the early Egyptian monarchs, in the Gebel Allak Mountains near the Red Sea, which were used in pulverizing the gol bearing quartz.

As to the authenticity of the "Calaveras skull,"

> "Great contest followed and much learned dust."

The probabilities seem in favor of its being a genuine human fossil, and th question recurs as to its character and the presumable age of the deposi from which it came. The latest geologist who has studied the locality, far as the writer is aware, says of these deposits : "Even before visitin California I had suspected these old river gravels might be contemporaneo with the glacial epoch, and I still think this possible. This area was n glaciated, and these old gravels, hundreds of feet in thickness, may ve well represent that great interval of time occupied in other regions by th glacial periods."[3] In discussing this question from the point of view of th character of the fossil animal remains contained in the gravels, we mu ontinually bear in mind what Professor E. D. Cope says of the *Mesozoic nd Cænozoic of North America* : "The faunæ of these periods have not yet een discriminated. . . . Many questions of the exact contemporaneity of iese different beds are as yet unsettled."[1] Professor Cope has previously ointed out how marked a difference there is between the quaternary fauna North America and that of Europe; we have no Hippopotamus or hinoceros Tichorinus, and they no Megatherium, Megalonyx, and other pecies. Under the varying conditions of animal existence thus implied, assail established ideas upon the sequence in man's development, or to aintain that he has had a long career on the Pacific slope of our continent efore he had made his appearance in Western Europe, seems to the writer be an attempt to explain "*ignotum per ignotius.*"

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[1] *The Epoch of the Mammoth and the Apparition of Man upon the Earth*, by James C. Southall, p. 399 (Philadelphia, 1878).

[2] Schoolcraft's *Indian Tribes of the Unit States*, vol. i. p. 101 (Philadelphia, 1851).

[3] S. B. J. Skertchly in the *Journal Anthr Inst.*, vol. xvii. p. 335 (Jan. 10, 1888).

What is really to be understood by the assumption that man existed in ertiary times? So profound a palæontologist as Professor William Boyd awkins thinks "it is impossible to believe that man should have been an xception to the law of change. In the Pliocene age we cannot expect to nd traces of man upon the earth. The living placental mammals had only ien begun to appear, and seeing that the higher animals have invariably ppeared in the rocks according to their place in the zoölogical scale, fishes, mphibians, reptiles, placental mammals, it is hardly reasonable to suppose iat the highest of all should then have been upon the earth."[2] When, ierefore, some of the geologists of our country support Professor Whitey's claim that these discoveries of human fossils have actually proved ian's existence in the Pliocene period, by arguments mainly based upon the ffects of erosion and the immense periods of time which these imply, or ivor his inference from the animal fossils contained in these deposits that iere has been "a total change in the fauna and flora of the region," and iat "the fauna of the gravel deposits is almost exclusively made up of xtinct species," we may well insist, with Dawkins, that the human remains hould not be regarded as standing upon a different basis from those of ie horse, since both occur under similar conditions. Dr. Leidy reports ie finding of remains of four different species of fossil *Equus*. But among iem "we may note the skull of a mustang, identical with that of Mexico nd California, which could not have been buried in the gravels of Sierra ounty before the time of the Spanish Conquest, when the living race of orses was introduced." Professor Jeffries Wyman says of the Calaveras kull: "Any conclusions based upon a single skull are liable to prove erroeous, unless we have sufficient grounds for the belief that such a skull is representative one of the race to which it belongs. . . . We have no sufcient reason for assuming in the present instance that the skull is a repreentative one. . . . The skull presents no signs of having belonged to an iferior race. In its breadth it agrees with the other crania from Califoria, except those of the Diggers, but surpasses them in the other particulars

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[1] *The American Naturalist*, vol. xxi. p. 459 887).

[2] *Early Man in America*, in the *North American Review*, Oct., 1883, p. 340.

in which comparisons have been made."[1] As, therefore, what appear to b
the skulls of a California Indian and that of a Mexican mustang have bee
found to occur in the same deposits, this circumstance, instead of provin
that man was an inhabitant of pliocene America, would seem to the write
to imply either that these deposits are comparatively recent, or that th
fossil bones found in them are so commingled that arguments based upo
purely palæontological considerations can be regarded as entitled to ver
little weight.

But although some American palæontologists are inclined to argue tha
these deposits belong to the Pliocene, on account of the character of th
vertebrate fossils found in them, it must not be forgotten that geologist
generally prefer to refer them to the Pleistocene. They believe that eve
the superimposition of lava beds upon the gravels does not establish a ver
high antiquity for them, and question whether the time that has elapse
since the outflow of the lava, as measured by the amount of erosion that ha
taken place in the gravels, is to be regarded as much greater than can pro
erly be assigned to the Pleistocene period elsewhere. Professor Whitne
himself admits the difficulty of distinguishing whether "deposits have bee
accumulated in the place where we find them previous to the cessation
the period of volcanic activity. The gravels which have not been protecte
by a capping of basalt, or only thinly or not at all covered by erupted m
terials, may in some places have been overlain by recent deposits in such
way that the line between volcanic and post-volcanic cannot be distinct
drawn. . . . It must not unfrequently have happened that fossils have bee
washed out of the less coherent detrital beds belonging to the volcan
series, carried far from their original resting-place, and deposited in such
position that they seem to belong to the present epoch."[2] In one of t
reports of Hayden's survey can be seen a plate representing "Mode
Lake Deposits capped with Basalt."[3] There is sufficient ground for b
lieving that the volcanic activity of the regions of the Sierras has continu
down to very recent times, geologically speaking, and that there is no su
great difference of age between the lava-cappings and the other beds
Professor Whitney supposes. Hayden thinks "the main portion of t
volcanic material of the West has been thrown out at a comparative
modern date."[4] Undoubtedly the amount of erosion that has taken pla
in these river gravels implies a great lapse of time, but so do the other fac
of physical geography which have been employed as chronometers by whi
to measure the time since the close of the quaternary period. To car
this erosion back to the tertiary times, and to assign man his place in t
world then on that ground, in face of the arguments to the contrary dra
from archæology, palæontology, and geology, in view of the essential wea
ness of the testimony upon which the arguments in its favor are base

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[1] *The Auriferous Gravels*, etc., p. 273.

[2] *Ibid.* p. 242.

[3] *Sixth annual report of the U. S. Geol. Su of the Territories*, p. 29.

[4] *Ibid.* p. 44.

would seem to be a most hazardous assumption. It is only equalled by the statement that "the discoveries made in Europe, which have already obtained general credence, carry man close to the verge of the tertiary; if not, indeed, a little the other side of the line."[1] In the writer's opinion, this is the belief of only a small number of the most extreme evolutionists in Europe, while the great body of cautious and critical observers think that it has not been proved, and a few are willing to hold their judgment in suspense.

Professor Whitney's conclusions, however, are supported by Mr. Wallace in the article quoted at the beginning of this chapter, in his character as an evolutionist of the most advanced school. He says: "Believing that the whole bearing of the comparative anatomy of man and of the anthropoid apes, together with the absence of indications of any essential change in his structure during the quaternary period, lead to the conclusion that he *must* have existed, as man, in pliocene times, and that the intermediate forms connecting him with the higher apes probably lived during the early pliocene or the miocene period, it is urged that all such discoveries . . . are in themselves probable and such as we have a right to expect."[2] In such a frame of mind it is very easy for him to wave aside every objection raised by the archæologist to the character of the evidence brought forward to sustain the alleged discoveries. To the objection that the objects accompanying the human remains, for which such a great antiquity is claimed, are too similar to those of comparatively recent times, he has a ready answer: "The same may be said of the most ancient bow and spear-heads and those made by modern Indians. The use of the articles has in both cases been continuous, and the objects themselves are so necessary and so comparatively simple that there is no room for any great modification of form." The writer can only state here that no archæologist holds this opinion, and will refer for a detailed statement of his reasons for the contrary view to an article by him upon *The Bow and Arrow unknown to Palæolithic Man.*[3]

It is not easy to believe that so vast a difference in age can be attributed to the deposits upon the opposite sides of the chain of the Sierra Nevada, as would follow if we are to hold that the auriferous gravels belong to the ertiary, while the Lahontan deposits belong to the quaternary period. Far more reasonable does it seem to suppose that they both fall within the two divisions into which we have seen that the pleistocene has been divided. To the writer it appears, from what study he has made of the evidences alleged of man's existence in North America in early times, that proof is wanting that he made his appearance here earlier than in interglacial times. Dr. Abbott's discoveries seem to be worthy of all the importance which has been assigned to them, and the more so from the fact that they are in accord with similar discoveries made in the Old World. The evidence adduced appears to be altogether too fragmentary and strained to warrant the conclusion that has been drawn that there is no proper correlation between the geological calendars of the two hemispheres.

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[1] *The Auriferous Gravels*, etc., p. 281.

[2] *The Antiquity of Man in North America*, p. 79.

[3] *Proc. of Boston Soc. of Nat. Hist.*, vol. xxiii. p. 269.

Besides the numerous palæolithic implements which the Trenton gravels have yielded, there have been found in them three human crania, more or less complete, and portions of others.[1] Professor Putnam is inclined to the opinion that these may be veritable remains of the makers of the palæolithic implements. But it is difficult to conceive how such fragile objects as human skulls, in this period and at this locality, could have survived the destructive forces to which they must have been subjected. We must recollect that the bones of man are very seldom met with in the river gravels of the Old World, and such crania as are accepted as belonging to these deposits are dolichocephalic, and not, like these, brachycephalic.[2] The circumstances under which these three have been found are not reported with sufficient detail to enable us to account satisfactorily for their presence, nor can we admit that the fact that they "are not of the Delaware Indian type" affords any adequate criterion fo our judgment. It is well established that "in America we find extreme brachycephaly, as well as among the prehistoric as among the historic peoples from British America to Patagonia. At the same time, dolichocephaly is found, besides among the Eskimos, throughout the American Indian tribes from north to south; but it cannot be considered an American craniologic characteristic."[3] The various forms of skulls, moreover, are found to be s intermingled that they have been compared to "what might be looked fo in a collection made from the potter's field of London or New York." The problem is still further complicated by the widespread custom amon the American tribes of altering the natural shape of the skull, sometime by flattening it, sometimes by making it as round as possible.[5] Taking al these matters into consideration, we are compelled to regard craniology b itself as an insufficient guide.

We have now passed in review such evidences of man's early existenc in North America as seem to be sufficiently substantiated by satisfactor proof, and have intentionally left out of consideration many former exam ples, which were accustomed to be cited before the science of prehistori archæology had formulated her laws and established her general conclu sions, as well as some more recent ones in which the evidence seems to b weak.

It only remains for the writer to express his own conclusions on th question. But first let him draw attention to the state of public opinio upon this subject as it is well expressed by an English writer: "The evidence for the existence of palæolithic man in America has been more fiercely contested even than in Europe, and the problem there is certainly more complicated. In Europe we can test the age of the remains not merely by their actual character, but also by the presence or absence of associated domestic animals. In America this test is absent, for there were virtually no domestic animals save the dog known to the pre-European inhabitants. We are therefore remitted to less direct evidence, namely, the provenance of the remains from beds of distinctly Pleistocene age, the fabric of the remains, and their association with animals, we have reason to believe, become extinct at the termination of that period."[1]

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[1] *Reports of Peabody Museum*, vol. iii. pp. 177, 408; iv. p. 35.

[2] *Early Man in Britain*, by W. Boyd Dawkins, p. 167.

[3] Dr. H. Ten Kate in *Science*, vol. xii. p. 228 (November 9, 1888).

[4] *Notes on the Crania of the N. E. Indian* by Lucien Carr, p. 9 (*Anniversary Memoirs* *Boston Soc. of Nat. Hist.*), 1880.

[5] *The Standard Natural History*, ed. by J. Kingsley, vol. vi. p. 143.

As an example of the spirit in which this "fierce contest" is waged in America, it will be sufficient to quote a few passages from a work by one of her most eminent men of science. He is speaking of "what seems to be a village site in Europe, of far greater antiquity than the Swiss lake-villages, and which may be a veritable 'Palæolithic' antediluvian town. It occurs at Solutré, near Mâcon, in eastern France, and has given rise to much discussion and controversy, as described by Messrs. De Ferry and Arcelin. . . . It destroys utterly the pretension that the men of the mammoth age were an inferior race, or ruder than their successors in the later stone age. . . . Lastly, many of the flint weapons of Solutré are of the palæolithic type characteristic of the river gravels, . . . while other implements and weapons are as well worked as those of the later stone age. Thus this singular deposit connects these two so-called ages, and fuses them into one."[2] The only comment the writer will make upon this statement is to say that he has twice visited the station at Solutré in company with M. Arcelin; that he has examined the collection of the late M. De Ferry at his house; and that he has before him the work which is supposed to be quoted from,[3] and he accordingly feels warranted in asserting with confidence that not one "flint implement of the palæolithic type characteristic of the river gravels" was ever found at Solutré. A note appended to Sir J. W. Dawson's rash statement adds: "Recent discoveries by M. Prunières, in caves at Beaumes Chaudes, seem to show that the older cave-men were in contact with more advanced tribes, as arrow-heads of the so-called neolithic type are found sticking in their bones, or associated with them. This would form another evidence of the little value to be attached to the distinction of the two ages of stone." The writer has already indicated his conviction that palæolithic man had not advanced sufficiently to invent the bow and arrow, and he wishes to add here that "arrow-heads of the so-called neolithic type" continued to be ordinary weapons employed during the Age of Bronze. He is only surprised that

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[1] *The Mammoth and the Flood*, by Henry H. Howorth, p. 316 (London, 1887).

[2] *Fossil Men and their modern Representatives*, by J. W. Dawson, p. 106 *et seq.* (London, 1880).

[3] *Le Maconnais Préhistorique, . . . ouvrage posthume par H. De Ferry . . . avec notes et cet. par A. Arcelin*, Mâcon, 1870.

Dr. Prunières' discoveries are not quoted to prove that there is no distinction between the Age of Stone and the Age of Bronze.

Tested by the canons of prehistoric archæology, superposition, association, and style, in the judgment of the writer the fact of the existence of palæolithic man upon this continent, and the distinction between the rude palæolithic implement and the skilfully chipped obsidian objects which belong to what is called in Europe the Solutré type (a development of the later period in the early stone age, which cannot be overlooked in discussing the question of the antiquity of man), are truths as firmly established as any taught by modern science. The small minority who refuse to admit the last stated proposition are laggards in her march, and the few doubters who still question the genuineness of the palæolithic implements from the Trenton gravels are not entitled by their knowledge of the processes of manufacturing stone implements to have much weight attached to their opinions.

Regarding, then, the existence of palæolithic man as established by the finding of four hundred of his relics in the Delaware valley near Trenton, we have next to inquire whether there is evidence that in that region man made any progress towards the neolithic condition. For an answer to this question we have only to study the immense collection of objects gathered by Dr. Abbott, and now deposited in the Peabody Museum at Cambridge. This seems to warrant a conclusion exactly the opposite to Professor Whitney's, who states that "so far as California is concerned . . . the implements, tools, and works of art obtained are throughout in harmony with each other, all being the simplest and least artistic of which it is possible to conceive;" and his further statement that the "rude tools required but little more skill than is indicated by the chipped obsidian implements which are now, and have been from all time, in use among the aborigines of this continent." [1]

We have already seen that Professor Whitney's inferences about the relics of man occurring in the gravels of California are not at all justified by the facts relating to their discovery as reported by him; and as he offers no proof of his other assertion that "chipped obsidian implements have been *for all time* in use among the aborigines of this continent," we will venture to question its accuracy, even should he argue that his loose statement was intended to apply only to the aborigines of California. Consequently we are somewhat at a loss to understand why Dr. Abbott should feel called upon to refute his conclusions. He does this, however, successfully in his *Primitive Industry*, which is so largely based upon this great collection as to answer satisfactorily as a catalogue for it. In his own words, "the careful and systematic examination of the surface geology of New Jersey, of itself, it is believed, shows as abundant and unmistakable evidence of the transition from a true palæolithic to a neolithic condition as is exhibited in the traces of human handiwork found in the valley of any uropean river."[1] The arguments upon which this conclusion is based are rawn from each of the three canons of prehistoric archæology. A certain lass of objects, superior in form and finish to the rude palæolithic imlement, but decidedly inferior in every respect to the common types of ndian manufacture, with which collectors of such objects all over our ountry are perfectly familiar, is found occurring *principally* in deposits vhich occupy a position intermediate between the drift gravels, from which ome the palæolithic implements, and the cultivable surface-soil, in which he former implements of the Indians are constantly brought to light by the rdinary operations of agriculture. In other instances, where these pecuar objects are found on or near the surface, not only do they not always ccur there in association with the common Indian relics, but the material f which they are made, argillite, is the same as that out of which all the our hundred palæolithic implements are fabricated, with the exception of two of quartz, one of quartzite, and one made from a black chert pebble."[2] 'his peculiar material occurs *in place* only a few miles north of Trenton, nd as the ice-sheet withdrew it afforded "the first available mineral for ffective implements other than pebbles, and these were largely covered vith water, and not so readily obtained as at present; while the dry land f that day, the Columbia gravel, contained almost exclusively in this egion small quartzite pebbles an inch or two in length."[3] The objects hus referred to exhibit only a few simple types. There is a rudely chipped pear-head, about three or four inches in length and from one to two in readth, characterized by the same kind of decomposition of the surface vhich is seen upon the palæolithic implements. These occur in large umbers; "as many as a thousand have been found in an area of fifty cres. . . . A peculiarity . . . is their frequent occurrence . . . at a depth hat suggests that they were lost when the face of the country was diferent from what it now is."[4] An implement is often found which was robably used as a knife, also very rudely chipped, and shaped somewhat ke a spear-head, but never having a sharp point. The argillite, of which hese are made, "is very hard and susceptible of being brought to a very harp edge," but they are now all much decomposed upon the surface, and are frequently brought to light through land-slides and the uprooting of rees from depths greater than it is usual to find jasper implements"[5] of he Indians.

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[1] *The Auriferous Gravels*, etc., p. 287.

The most common object of all, however, and one that occurs in very arge numbers, is a slender argillite spear-point, about three inches in ength, of nearly uniform size, and having little or no finish at the base. 'hese are found at various depths up to five feet, principally in the alluvial mud that has accumulated upon the meadows skirting the Delaware River, that are liable to be overflowed occasionally by the tide. From this circumstance, in addition to their shape, Dr. Abbott has conjectured that they were used as fish-spears.[1] "This deposit of mud is of a deep blue-black color, stiff in consistency, and almost wholly free from pebbles. It is composed of decomposed vegetable matter and a large percentage of very fine sand. It varies in depth from four to twenty feet, and rests on an old gravel of an origin antedating the river gravels that contain palæolithic implements. This mud is the geological formation next succeeding the palæolithic implement-bearing gravels. . . . A careful survey of this mud deposit, made at several distant points, leads to the conclusion that its formation dates from the exposure of the older gravel upon which it rests, through the gradual lessening of the bulk of the river, until it occupied only its present channel. . . . The indications are that the present volume and channel of the river have been essentially as they now are for a very long period; and the character of the deposit is such that its accumulation, if principally from decomposition of vegetable matter, must necessarily be very gradual. Since its accumulation to a depth sufficient to sustain tree growth, forests have grown, decayed, and been replaced by a growth of other timber. While so recent in origin that it seems scarcely to warrant the attention of the geologist, its years of growth are nevertheless to be numbered by centuries, and the traces of man found at all depths through it hint of a distant, shadowy past that is difficult to realize.

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[1] *Primitive Industry; or Illustrations of the Iandiwork in Stone, Bone, and Clay of the Na-ve Races of the Northern Atlantic Seaboard of merica*, by Charles C. Abbott (Salem and Boson, 1881), p. 3.

[2] *Proc. Boston Soc. of Nat. Hist.*, vol. xxiii. p. 422.

[3] *Proc. of Am. Assoc. for Adv. of Science*, vol xxxvii.

[4] *Primitive Industry*, p. 253.

[5] *Ibid.* p. 262.

"The same objection, it may be, will be urged in this instance as in others where the comparative antiquity of man is based upon the depth at which stone implements are found, — that all these traces have been left upon the present surface of the ground, and subsequently have gotten, by unexplained means, to the various depths at which they now occur. It is, indeed, difficult to realize how some of these argillite spear-points have finally sunk through a compact peaty mass until they have reached the very base of the deposit. For those who urge that this sinking process explains the occurrence of implements at great depths, it remains to demonstrate that the people who made these argillite fish-spears either made only these, or were careful to take no other evidences of their handicraft with them when they wandered about these meadows; for certainly nothing else appears to have shared the fate of sinking deeply into the mud. In fact, the objection mentioned is met in this case, as in that of the palæolithic implements, that if these fish-spears are of the same age and origin as the ordinary Indian relics of the surface, then all alike should be found at great depths. This, we know, is not the case. Furthermore, the character of the deposit is not that of a loose mud or quicksand, but more like that of peat. It has a close texture, is tough and unyielding to a degree, and offers decided resistance to the sinking of comparatively light objects deeply into it. This is, of course, lessened when the deposit is subject to tidal overflows, and in

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[1] *Primitive Industry*, p. 276 *et seq.*

e immediate vicinity of springs, which, bubbling through it, have caused
deposit of quicksand. While here an object sinks instantly out of sight,
is not here that we must judge of the character of the formation as a
hole; and over the greater portion of its area we find no evidence of
bjects disappearing beneath the surface at a more rapid rate than the
ccumulation of decomposing vegetable matter would explain. Efforts
ave been made to determine the rate of progress of this growth of mould,
ut they are not wholly satisfactory; nevertheless the indications are suffi-
ient to warrant our belief that the rate is so gradual as to invest with great
rchæological interest the characteristic traces of man found in these allu-
ial deposits."

Although these argillite spear-points seem *principally* to occur, as has
een stated, in the alluvial mud along the banks of the Delaware, yet they
re often found upon the surface, and associated with objects of Indian
rigin. This circumstance Dr. Abbott attempts to explain by the following
onsiderations: "One marked result of the deforesting of the country and
s constant cultivation has been to remove in great part the many inequal-
ies of the surface and to dry up many of the smaller brooks. The hillocks
ave been worn down, the valleys filled up, and this of course has resulted
bringing to the surface, on the higher ground, the argillite implements
hich were at considerable depths, and in burying in the valleys the more
ecent jasper and quartz implements of Indian origin that were left upon
e soil when lost or discarded by the red man. In the remnants of forests
ill remaining, where no such disturbance of the soil has occurred, the
lative depths at which argillite and jasper respectively occur indicate the
reater age of the former."[1]

He recurs to this subject in another place:[2] "The telling fact with refer-
nce to these argillite spear-points is that they are not, in the same sense
jasper arrow-heads, surface-found implements. They occur also, and
ven more abundantly, beneath the surface-soil. The celebrated Swedish
aturalist, Peter Kalm, travelled throughout central and southern New
ersey in 1748–50, and in his description of the country remarks: 'We
nd great woods here, but when the trees in them have stood a hundred
nd fifty or a hundred and eighty years, they are either rotting within or
sing their crown, or their wood becomes quite soft, or their roots are no
nger able to draw in sufficient nourishment, or they die from some other
use. Therefore, when storms blow, which sometimes happens here, the
ees are broken off either just above the roots, or in the middle, or at the
mmit. Several trees are likewise torn out with their roots by the power
the winds. . . . In this manner the old trees die away continually, and
e succeeded by a younger generation. Those which are thrown down lie
the ground and putrefy, sooner or later, and by that means increase the
ack soil, into which the leaves are likewise finally changed, which drop
oundantly in autumn, are blown about by the winds for some time, but are

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[1] *Ibid.* p. 515, *note.*

[2] *Proc. of Am. Assoc. for Adv. of Science*, vol. xxxvii.

heaped up and lie on both sides of the trees which are fallen down. It requires several years before a tree is entirely reduced to dust.'[1] This quotation has a direct bearing on that which follows. It is clear that the surface-soil was forming during the occupancy of the country by the Indians. The entire area of the State was covered with a dense forest, which century after century was increasing the *black soil* to which Kalm refers. If, now, an opportunity occurs to examine a section of virgin soil and underlying strata, as occasionally happens on the bluffs facing the river, the limit in depth of this black soil may be approximately determined. An average derived from several such sections leads me to infer that the depth is not much over one foot, and the proportion of vegetable matter increases as the surface is approached. Of this depth of superficial soil probably not over one half has been derived from decomposition of vegetable growths. While no positive data are determinable in this matter beyond the naked fact that rotting trees increase the bulk of top-soil, one archæological fact that we do derive is that *flint implements* known as Indian relics belong to this superficial or 'black soil,' as Kalm terms it. Abundantly are they found on the surface; more sparingly are they found near the surface; more sparingly still the deeper we go; while at the base of this deposit of soil the *argillite* implements occur in greatest abundance. Here, then, we have the whole matter in a nut-shell. The two forms were dissociated until by the deforesting of the country and subsequent cultivation of the soil, except in a few instances, they became commingled."

A further argument in respect to the relation which argillite implements bear to those made of jasper and quartz is derived from the relative proportion in which they occur in localities which are believed to have been occupied first by the users of argillite, and subsequently by the Indians. "Of a series of twenty thousand objects gathered in Mercer County, New Jersey, forty-four hundred were of argillite, and of such rude forms and in such limited varieties as would be expected of the productions of a less cultured people than the Indian of the stone age. Of this series of forty-four hundred, two hundred and thirty-three are well-designed drills or perforators and scrapers; the others being spear-points, fishing-spears, arrow-heads, and knife-like implements."[2] This is supplemented by negative evidence drawn from "the character of the sites of arrow-makers' open-air workshops, or those spots whereon the professional chipper of flint pursued his calling. In the locality where I have pursued my studies several such sites have been discovered and carefully examined. In no one of these workshop sites has there been found any trace of argillite mingled with the flint-chips that form the characteristic feature of such spots. On the other hand, no similar sites have been discovered, to my knowledge, where argillite was used exclusively. The absence of this mineral cannot be explained on the ground that it was difficult to procure, for such is not the case. It contitutes, in fact, a considerable percentage of the pebbles and boulders of he drift from which the Indians gathered their jasper and quartz pebbles or working into implements and weapons. If the absence of argillite from uch heaps of selected stones is explained by the assertion that the Indians ad recognized the superiority of jasper, then the belief that argillite was sed prior to jasper receives tacit assent. If, however, it was the earlier *ndians* who used argillite, and gradually discarded it for the various forms f flint, then we ought to find workshop sites older than the time of *flint-*hipping, and others where the two minerals are associated. This, as has een stated, has not been done." [1]

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[1] Peter Kalm, *Travels into North America, translated by J. R. Forster* (London, 1770–71), v. ii. p. 17.

[2] *Primitive Industry*, p. 462.

Professor Putnam has found a confirmation of these views of Dr. Abbott the contents of a great shell-heap at Keyport, in New Jersey, invesigated over thirty years ago by Rev. Samuel Lockwood, and now placed the Peabody Museum at Cambridge. "As the shell-heap at Keyport, nce covering a mile or more in length along a narrow strip bordered upon ne side by the ocean and on the other by Raritan Bay, is entirely oblitrated, it is of importance that the materials obtained from it are now in e museum for comparison with our very extensive collections from the hell-heaps of New England. The fact that at certain places on this arrow strip between the bay and the sea the prevailing implements ere of argillite and of great antiquity has a peculiar significance in conection with those from Trenton, and again points to an intermediate eriod between the palæolithic and the late Indian occupation of New ersey." [2]

To these various arguments the writer wishes to add the statement that his personal knowledge argillite spear-points, and especially those of e fish-spear type, are occasionally found in other parts of our country esides New Jersey. In his own researches, which have been principally arried on upon the seacoast of New England, he has *never* found an xample of them in the shell-heaps proper, which are universally recogized by archæologists as relics of the Indians. The few which he has und himself, or has obtained from others, have come from meadows by e side of rivers or ponds, where they might very well have been used as sh-spears.

A further confirmation of Dr. Abbott's opinions in regard to the descendnts of palæolithic man is derived from certain discoveries made by Mr. ilborne T. Cresson in the alluvial deposits at Naaman's Creek, in Delaare. These were first made known in November, 1887, by a letter to the ditor of the American Antiquarian. "In 1870, a fisherman living in the illage of Marcus Hook, Pennsylvania, gave me some spear and arrow heads aked from a dense argillite, as well as other rude implements of a preistoric people, which he had found on some extensive mud flats near the outh of Naaman's Creek, a small tributary of the Delaware. The finder stated that while fishing . . . he had noticed here and there the ends of logs or stakes protruding from the mud, and that they seemed to him to have been placed in rows. . . . A visit made a few days afterward to the place . . . disclosed the ends of much-decayed stakes or piles protruding here and there above the mud. . . . On my return from France in 1880 I again visited the spot. . . . While abroad I studied in spare moments many archæological collections, especially those from the Swiss Lake Dwellings, and visited the various lake stations of Switzerland. The rude dressings of the ends of the piles in some places were evidently made with blunt stone implements, and recalled those I had seen on the ends of the posts in the Delaware River marshes. Since 1880 I have quietly examined the remains, excavating what pile ends remained *in situ* (preserving a few that did not crumble to pieces), preserving careful notes of the dredging and excavations (at low tides), carried on principally by myself, aided at times by interested friends. The results so far seem to indicate that the ends of the piles imbedded in the mud, judging from the implements and other débris scattered around them, once supported shelters of early man that were erected a few feet above the water, — the upper portion of the piles having disappeared in the long lapse of time that must have ensued since they were placed there. (The flats are covered by four and one half feet of water on the flood tide; on the ebb the marsh is dry, and covered with slimy ooze several feet in depth, varying in different places.) Three different dwellings have been located, all that exist in the flats referred to, after a careful examination within the last four years of nearly every inch of ground carefully laid off and examined in sections. The implements found in two of 'the supposed river dwelling sites' are very rude in type, and generally made of dense argillite, not unlike the palæoliths found by my friend Dr. C. C. Abbott in the Trenton gravels. The character of the implements from the other or third supposed river dwelling on the Delaware marshes is better finished objects made of argillite."[1]

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[1] *Proc. of Amer. Assoc. for Adv. of Science*, vol. xxvii.

[2] *Rep. of Peabody Museum*, vol. iv. p. 43.

The greater portion of the objects obtained by Mr. Cresson has been placed in the Peabody Museum, to which he is at present attached as a special assistant; but he has also kindly sent to the writer a small illustrative collection from each site, for his study.

The writer would hesitate to draw the inference from this single discovery that the custom of living in pile-dwellings ever prevailed in North America, although there is evidence that such a practice was not unknown in South America. This is to be found in the account of the voyage of Alonso de Ojeda along the north coast of that country, in the year 1499 in which he was accompanied by Vespucius.[2] I will quote the language of Washington Irving: "Proceeding along the coast, he arrived at a vast deep gulf resembling a tranquil lake, entering which he beheld on the eastern side a village whose construction struck him with surprise. I consisted of twenty large houses, shaped like bells, and built on piles driven into the bottom of the lake, which in this part was limpid and of but little depth. Each house was provided with a drawbridge, and with canoes by which the communication was carried on. From these resemblances to the Italian city, Ojeda gave to the bay the name of the Gulf of Venice, and it is called at the present day Venezuela, or Little Venice."[1] There is no inherent improbability that such a custom may have prevailed upon the shores of Delaware Bay, and for the same reason that has caused it to be followed elsewhere. "It has been stated that the natives living near Lake Maracaybo, in South America, erect pile dwellings over the lake, to which they resort in order to escape from the mosquitoes which infest the shore. Lord also mentions that the Indians of the Suman prairie, British Columbia, on the subsidence of the annual floods in May and June, build pile dwellings over a lake there, to which they retire to escape from the mosquitoes which at that period infest the prairie in dense clouds, but will not cross the water."[2]

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[1] Vol. ix. p. 363.

[2] See Vol. II. pp. 144 and 187.

But it would be safer, probably, to consider these discoveries of Mr. Cresson's as marking the site of ancient aboriginal fish-weirs, such as are described by Captain Ribault and other early explorers as made by the natives.[3] The writer agrees with Professor Putnam in thinking that "the fact that at only one station pottery occurs, and, also, that at this station the stone implements are largely of jasper and quartz, with few of argillite, while at the two other stations many rude stone implements are associated with chipped points of argillite, with few of jasper and other flint-like material, is of great interest."[4]

Still further confirmation of the progress of the palæolithic man in this region is afforded by discoveries made in a rock-shelter near the head-waters of Naaman's Creek, as early as 1866, for an account of which, and the preservation of the objects then found, we are also indebted to Mr. Cresson: "The remains of the Naaman's Creek rock-shelter luckily fell into hands that have preserved them. . . . To give a detailed account of *how* the rock-shelter was discovered would consume too much time. Let us rather consider briefly the . . . contents of the shelter's various layers. . . . Fortunately careful drawings of the shelter were made during its excavation between the years 1866 and 1867. . . . A glance shows the outcrop of the rock as it appeared before the excavations were begun in 1866. The trees show that the ground was then covered by a thick wood. . . . From the point that marks the innermost edge of the outcrop, overhanging the hollow, a perpendicular line dropped to the ground would measure five and one eighth feet, the height of the projection of the rock above the ground before the excavations were commenced.

"Twenty-two feet eight inches from the outcrop, measured from its inner face, there is still another outcrop. . . . This marks the opposite side of the hollow. . . . It is evident how admirably the place was adapted to th wants of the early hunters of the Delaware valley, whether it be as shelter, or as a place of defence against their enemies. . . . Let us look a the layers of earth that filled it, these being intermingled with rude implements, broken bones, and charcoal, indicating that man at times had resorte to the spot.

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[1] *Companions of Columbus*, p. 28.

[2] *Flint Chips, a Guide to Prehistoric Archæology*, by Edw. T. Stevens, p. 123.

[3] *Antiquities of the Southern Indians*, by C. C. Jones, p. 320.

[4] *Rep. of Peabody Museum*, vol. iv. p. 45.

"Layer C [the lowest]. This was composed of schist, resting on the bed rock of the shelter. A layer of aqueous gravel, of the same type as tha underlying Philadelphia, rested on the decomposed schist. The greates depth of the red gravel layer was four feet two and one fourth inches measured from the layer of decomposed schist. Least depth of gravel ob served, one foot three inches. . . .

"Layer A [next above]. This was a layer of grayish-white brick cla mixed with yellow clay, similar to that underlying Philadelphia, on top o which was a layer mixed with sand. . . . Stone implements were discovere in this layer. They were but few in number and very rude, exclusively o argillite, and palæolithic in type. Greatest depth of layer, two feet one an one half inches. No implements of bone were found. . . .

"Layer T [next above]. This was of reddish gravel, intermingled wit decomposed schist, cinders, and broken bones of animals. Fragments of human skull were found . . . in this layer. A fragment of a human ri was also preserved. The fragments of the skull are covered here and ther by dendritic incrustations. Rude spears and implements of argillite wer found in this layer. Depth of layer, thirteen to eighteen inches.

"Layer D [next above]. Composed of reddish-yellow clay. Depth, tw feet three inches. No implements.

"Layer M [next above]. In this layer were numerous implements o argillite and some of bone, intermingled with rude implements of quartzit and jasper and fragments of rude pottery, with charcoal. Greatest dept one foot one and one half inches. Least depth, three inches.

"Layer R [next above]. Yellow clay. Greatest depth, two feet one an one half inches; least depth, eight inches. No implements.

"Layer W [next above]. This contained chipped implements; those mad of jasper and quartzite predominating over those of argillite. In the lowes part of this layer were fragments of rude pottery. In the upper portion o the layer were potsherds decidedly superior in decoration and technique t those from the lower portion. Geological composition of this layer, yello clay loam. Greatest depth, three feet four inches. Least depth, two an one half inches.

"Layer L [top]. This consists of leaf mould seven inches thick, converte into swamp muck by decomposing action of water from springs. No im plements. . . . No remains of extinct animals were found."[1]

Professor Putnam thus proceeded to comment upon these discoveries "We have a series of objects, taken from the several layers of the shelte giving us a chronology of the utmost importance, as each period of occupation of the shelter was followed by a natural deposition, separating the different periods of occupation. The stone implements . . . are taken from the lowest layer, indicating the earliest period of occupation of the rock-shelter; and . . . they correspond in shape and rudeness of execution with those taken from the gravel-bed at Trenton; and like most of the latter they are all of argillite. The specimens from the second period are of argillite, and while many are chipped into slender points, they are still of very rude forms; and these in turn correspond with the argillite points found by Dr. Abbott deep down in the black soil, or resting upon the gravel, at Trenton. In the upper layers of the cave we observe . . . the gradual introduction of implements chipped from jasper and quartz, and corresponding in form with those found upon the surface throughout the valley. And as a further indication of this later development, it was only in the upper layers that pottery, bone implements, and ornaments were found; the three distinct periods of occupation of the Delaware valley are thus distinctly shown; and this cave-shelter is a perfect exemplification of the results which Dr. Abbott had obtained from a study of the specimens which he has collected upon the surface, deep in the black soil, and in the gravel, at Trenton."

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[1] "Early Man in the Delaware Valley," in the *Proc. Boston Soc. of Nat. Hist.*, vol. xxiv.

From the accumulative force of these various lines of reasoning, the writer thinks that there is a strong probability that here, on the waters of the Delaware, man developed from the palæolithic to the neolithic stage of culture. But we cannot follow Dr. Abbott in his further conclusion (if, indeed, he still holds to it) that we are to seek the descendants of this primitive population in the Eskimos, driven north after contact with the Indians. We have failed to discover the slightest evidence to sustain this position. The hereditary enmity existing between the Eskimos and the Indians may be equally well explained upon the theory that the former are later comers to this continent, and are therefore hated by the Indian races as intruders. The two races are certainly markedly unlike.

In the absence of any evidence tending to show the development of the argillite-using people into the Indian races, with their perfected implements and weapons of the age of polished stone, it seems more reasonable to hold with Professor Dawkins that the earlier and ruder race perished before or were absorbed by a people furnished with a better equipment in the struggle for the "survival of the fittest." The palæolithic man of the river gravels of Trenton and his argillite-using posterity the writer believes to be completely extinct.[1]

It only remains for the writer to express his regret that he has been prevented from setting forth in detail, at the present time, the grounds upon which he has come to other conclusions which were briefly indicated at the beginning of this chapter. He can only repeat here his belief that the so-called Indians, with their many divisions into numerous linguistic families, were later comers to our shores than the primitive population, whose development he has attempted to trace; that the so-called "moundbuilders" were the ancestors of tribes found in the occupation of the soil; and that the Pueblos and the Aztecs were only peoples relatively farther advanced than the others.

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[1] *Early Man in Britain*, p. 173.

The writer further thinks that these are propositions capable, if not of being demonstrated, at least of being made to appear in a very high degree probable by means of authorities which will be found amply referred to in other chapters of this volume.

Henry W. Haynes

THE PROGRESS OF OPINION RESPECTING THE ORIGIN AND ANTIQUITY OF MAN IN AMERICA.

BY THE EDITOR.

THE literature respecting the origin and early condition of the American aborigines is very extensive: nd, as a rule, especially in the earlier period, it is not characterized by much reserve in connecting races by istorical analogies.[1] Few before Dr. Robertson, in discussing the problem, could say: "I have ventured to nquire without presuming to decide."

The question was one that allured many of the earlier Spanish writers like Herrera and Torquemada. mong the earlier English discussions is that of Wm. Bourne in his *Booke called the Treasure for Travel-ers* (London, 1578), where a section is given to "The Peopling of America." The most famous of the early iscussions of the various theories was that of Gregorio Garciá, a missionary for twenty years in South merica, who reviewed the question in his *Origen de los Indios de el Nuevo Mundo* (Valencia, 1607).[2] He oes over the supposed navigations of the Phœnicians, the identity of Peru with Solomon's Ophir, and the hances of African, Roman, and Jewish migrations, — only to reject them all, and to favor a coming of Tar-ars and Chinese. Clavigero thinks his evidences the merest conjectures. E. Brerewood, in his *Enquiries uching the diversity of languages and religions* (London, 1632, 1635), claimed a Tartar origin. In New ngland, where many were believers in the Jewish analogies, it is somewhat amusing to find not long after his the quizzical Thomas Morton, with what seems like mock gravity, finding the aboriginal source in "the cattered Trojans, after such time as Brutus departed from Latium."[3] The reader, however, is referred to ther sections of the present volume for the literature bearing upon the distinct ethnical connections of the arly American peoples.

The chief literary controversy over the question began in 1642, when Hugo Grotius published his *De rigine Gentium Americanarum Dissertatio* (Paris and Amsterdam, 1642).[4] He argued that all North

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[1] Waitz, *Introd. to Anthropology*, Eng. trans., p. 255, oints out the dangers of over-confidence in this research. f. also J. H. McCulloh's *Researches* (1829).

The best indications of the sources as respects the origin the Americans can be found in Haven's *Archæology of e United States* (*Smithsonian Contributions*, viii., 1856); ancroft's foot-notes to his *Nat. Races*, v. ch. 1; Short, ch. on the diversity of opinions; Poole's *Index*, p. 637, and *upplement*, p. 274. Cf. Drake's *Book of the Indians*, h. 2.

Without anticipating the characterization and mention of e essential books later to be indicated, some miscellaneous ferences may be added without much attempt at classifyg them.

Among English writers: Hyde Clarke's *Researches prehistoric and protohistoric comparative philology, ythology, and archæology in connection with the origin culture in America* (London, 1875). Robert Knox's *aces of Men* (London, 1862); J. Kennedy in his *Probale origin of the American Indians* (London, 1854), and his *Essays, ethnological and linguistic* (London, 1861); C. Beltrami's *Pilgrimage in Europe and America* ondon, 1828); C. H. Smith in *Edinburgh New Philophical Journal*, xxxviii. 1.

Some French authorities: Nadaillac, *Les premiers mmes*, ii. 93, and his *L'Amérique préhistorique*, ch. 10, d to the English translation W. H. Dall adds a chapter this subject; Brasseur de Bourbourg's introduction to *Popul Vuh* (section 4); Dabry de Thiersant's *De l'orine des indiens du nouveau monde et de leur civilisation* aris, 1883); M. A. Baguet's "Les races primitives des ux Amériques" in *Bull. de la Soc. de Géog. d'Anvers*, i. 440; Domenech in *Revue Contemporaine*, 1st ser., xiii. 283; xxxiv. 5, 284; 2d ser., iv.; Baron de Bretton's *Origines des peuples de l'Amérique*, in the Nancy *Compte-rendu*, *Congrès des Américanistes*, i. 439.

Among German writers perhaps the most weighty are Theodor Waitz in his *Anthropologie der Naturvölker* (1862–66), and Carl Vogt's *Vorlesungen über den Menschen*, translated as *Lectures on Man* (1864).

American writers: Drake's *Book of the Indians*, ch. 1, 2; Doddridge's *Notes on the Settlement and Indian Wars of Virginia and Penna.*, ch. 3; Geo. Catlin's *Life amongst the Indians* (1861), and his *Last Rambles* (1867), with extracts in *Smithsonian Ann. Rept.*, 1885, iii. 749; Isaac McCoy's *Hist. of Baptist Indian Missions* (Washington, 1840); Short's *No. Amer. of Antiq.*, ch. 4, 11; B. H. Coate's *Annual Discourse before the Penna. Hist. Soc.* (Philad., 1834), reviewing the various theories; also in their *Memoirs*, iii. part 2; John Y. Smith in *Wisconsin Hist. Soc. Ann. Rep.*, iv. 117; Dennie's *Portfolio*, xiii. 231, 519; xiv. 7; A. R. Grote in *Amer. Naturalist*, xi. 221 (April, 1877); C. C. Abbott in *Ibid.* x. 65.

Some Canadian writers: J. Campbell in *Quebec Lit. and Hist. Soc. Transactions* (1880–81); Napoléon Legendre's "Races indigénes de l'Amérique devant l'histoire" in *Proc. Royal Soc. of Canada*, ii. 25.

[2] The book is a rare one. Field, No. 586. Sabin, vii. p. 157. Quaritch in 1885 had not known of a copy being for sale in twenty years. He then had two (Nos. 28,355-56). There is one in Harvard College Library. Garcia drew somewhat from a manuscript of Juan de Vetanzos, a companion of Pizarro, and he gives the native accounts of their origin. There was a second edition, with Barcia's Annotations, Madrid, 1729 (Carter-Brown, iii. 432).

[3] *New English Canaan* (Amsterdam, 1637 — C F. Adams' ed., 1883, pp. 125, 129).

[4] There is an English translation in the *Bibliotheca*

America except Yucatan (which had an Ethiopian stock) was peopled from the Scandinavian North; that the Peruvians were from China, and that the Moluccans peopled the regions below Peru. Grotius aroused an antagonist in Johannes de Laet, whose challenge appeared the next year: *Joannis de Laet Antwerpian notae ad dissertationem Hugonis Grotii de origine gentium Americanarum: et observationes aliquot ad meliorem indaginem difficillimæ illius quæstionis* (Amsterdam, 1643).[1] He combated his brother Dutch- man at all points, and contended that the Scythian race furnished the predominant population of America The Spaniards went to the Canaries, and thence some of their vessels drifted to Brazil. He is inclined to accept the story of Madoc's Welshmen, and think it not unlikely that the people of the Pacific islands may have floated to the western coast of South America, and that minor migrations may have come from other lands. He supports his views by comparisons of the Irish, Gallic, Icelandic, Huron, Iroquois, and Mexican tongues.

To all this Grotius replied in a second *Dissertatio*, and De Laet again renewed the attack: *Ioannis de Laet Antwerpiani responsio ad dissertationem secundam Hugonis Grotii, de origine gentium Americanarum Cum indice ad utrumque libellum* (Amsterdam, 1644).[2]

De Laet, not content with his own onset, incited another to take part in the controversy, and so George Horn (Hornius) published his *De Originibus Americanis, libri quatuor* (Hagæ Comitis, *i. e.* The Hague 1652; again, Hemipoli, *i. e.* Halberstadt, 1669).[3] His view was the Scythian one, but he held to later additions from the Phœnicians and Carthaginians on the Atlantic side, and from the Chinese on the Pacific.

For the next fifty years there were a number of writers on the subject, who are barely names to the present generation;[4] but towards the middle of the eighteenth century the question was considered in *The American Traveller* (London, 1741), and by Charlevoix in his *Nouvelle France* (1744). The author of an *Enquiry into the Origin of the Cherokees* (Oxford, 1762) makes them the descendants of Meshek, son of Japhet. In 1767 however, the question was again brought into the range of a learned and disputatious discussion, reviving al the arguments of Grotius, De Laet, and Horn, when E. Bailli d'Engel published his *Essai sur cette question Quand et comment l'America a-t-elle été peuplée d'hommes et d'Animaux?* (5 vols., Amsterdam, 1767, 2d ed., 1768). He argues for an antediluvian origin.[5] The controversy which now followed was aroused by C. De Pauw's characterization of all American products, man, animals, vegetation, as degraded and inferior to nature in the old world, in an essay which passed through various editions, and was attacked and defended in turn.[6] An Italian, Count Carli, some years later, controverted De Pauw, and using every resource of mythol ogy, tradition, geology, and astronomy, claimed for the Americans a descent from the Atlantides.[7] It was no

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Curiosa. [Edited by Edmund Goldsmidt.] (Edinburgh, 1883–85.) No. 12. *On the origin of the native races of America. To which is added, A treatise on foreign languages and unknown islands, by Peter Albinus. Translated from the Latin.* The translation is unfortunate in its blunders. Cf. H. W. Haynes in *The Nation*, Mar. 15, 1888. Grotius was b. 1583; d. 1645.

[1] Carter-Brown, ii. 522, 523, 543.

[2] This book is scarcer than the first (Brinley, iii. 5414–15). There is a letter addressed to De Laet, touching Grotius, in Claudius Morisotus's *Epistolarum Centuriæ duæ*, 1656.

[3] Brinley, iii. 5407–8. In Samuel Sewall's *Letter Book*, i. 289, is an amusing reference to the "vanities of Hornius."

[4] Jo. Bapt. Poisson, *Animadversiones ad ea quæ Hugo Grotius et Joh. Lahetius de origine gentium Peruvianarum et Mexicanarum scripserunt* (Paris, 1644); Rob. Comtæus Nortmanus, *De origine gentium Americanarum* (Amsterdam, 1664), an academic dissertation adopting the Phœnician view; A. Mil, *De origine animalium et migratione populorum* (Geneva, 1667); Erasmus Franciscus, *Lust- und Staatsgarten* (Nürnberg, 1668), with a third part on the aboriginal inhabitants (Müller, 1877, no. 1150); Gottfried [Godofredus] Wagner, *De Originibus Americanis* (Leipzig, 1669); J. D. Victor, *Disputatio historia de America* (Jena, 1670); E. P. Ljung, *Dissertatio de origine gentium novi orbis prima* (Stregnäs [Sweden] 1676). An essay of 1695 reprinted in the *Memoirs, Anthrop. Soc. of London*, i. 365; Nic Witsen, *Noord-en-Oost Tartarye* (2d ed., Amsterdam, 1705), holding to the migration from north-eastern Asia.

[5] Cf. Alex. Catcott's *Treatise on the Deluge* (2d ed., enlarged, London, 1768), and A. de Ulloa's *Noticias Americanas* (Madrid, 1772, 1792), for speculations.

[6] Cf. Sabin, xiv. 59,239, etc., for editions. The original three vols. appeared in Berlin in 1768, 1769, and 1770, respectively. The best edition, with De Pauw's subsequent defence and Pernetty's attack, was issued at London in three vols. in 1770: —

Recherches philosophiques sur les Américains, ou Mé moires interessants pour servir à l'histoire de l'espèc humaine.

Contents: Du climat de l'Amérique. — De la complexion altérée de ses habitants. — De la découverte du Nouveau Monde. — De la variété de l'espèce humaine en Amérique — De la couleur des Américains. — Des anthropophages — Des Eskimaux; des Patagons. — Des Blafards et de Négres blancs. — De l'Orang-Outang. — Des hermaphro dites de la Floride. — De la circoncision et de l'infibulation — Du génie abruti des Américains. — De quelques usage bizarres, communs aux deux continents. — De l'usage de flèches empoisonnées chez les peuples des deux continents — De la religion des Américains. — Sur le grand Lama. — Sur les vicissitudes de notre globe. — Sur le Paraguai. — Défenses des recherches sur les Américains. — D. Pernetty Dissertation sur l'Amérique et les Américains contre le recherches philosophiques de M. de Pauw.

There was an edition in French at Berlin in 1770, in vols., and, with Pernetty annexed, in 1774, in 3 vols. Th *Defenses* was printed also at Berlin in 1770. These wer all included in De Pauw's *Œuvres Philosophiques*, published at Paris "*an iii.*" An English translation by J Thomson was printed at London, 1795. Daniel Webb published some selections in English at Bath, 1789, 1795, an at Rochdale, 1806. Pernetty's *Examen* was printed a Berlin in 1769. There is another little tractate of thi time attributed to Pernetty, *De l'Amérique et des Amér cains* (Berlin, 1771), in whose humor De Pauw fares n better; but Rich has a note on the questionable attributin of it to Pernetty, and its real author was probably C. d Bonneville (cf. Hœfer).

[7] *Delle Lettere Americane* (*opere*, xi.–xiv., Milano, 1784–94); better known in J. B. L. Villebrune's French translation, *Lettres Américaines* (2 vols.; Paris and Boston, 1787) Sabin, no. 10,912. There is also a German version.

till after reports had come from the Ohio Valley of the extensive earthworks in that region that the question of the earlier peoples of America attracted much general attention throughout America; and the most conspicuous spokesman was President Stiles of Yale College, in an address which he delivered before the General Assembly of Connecticut, in 1783, on the future of the new republic.[1] In this, while arguing for the unity of the American tribes and for their affinity with the Tartars, he held to their being in the main the descendants of the Canaanites expelled by Joshua, whether finding their way hither by the Asiatic route and establishing the northern Sachemdoms, or coming in Phœnician ships across the Atlantic to settle Mexico and Peru.[2] Lafitau in 1724 (*Mœurs de Sauvages*) had contended for a Tartar origin. We have examples of the reasoning of a missionary in the views of the Moravian Loskiel, and of a learned controversialist in the treatise of Fritsch, in 1794 and 1796 respectively.[3]

BENJAMIN SMITH BARTON.

The earliest American with a scientific training to discuss the question was a professor in the University of Pennsylvania, Benjamin Smith Barton, a man who acquired one of the best reputations in his day among Americans for studies in this and other questions of natural history. His father was an English clergyman settled in America, and his mother a sister of David Rittenhouse. It was while he was a student of medicine in Edinburgh that he first approached the subject of the origin of the Americans, in a little treatise on American Antiquities, which he never completed.[4] His *Papers relating to certain American Antiquities* (Philad., 1796) consists of those read to the Amer. Philos. Soc., and printed in their *Transactions* (vol. iv.). They were published as the earnest of his later work on American Antiquities. He argues against De Pauw, and contends that the Americans are descended — at least some of them — from Asiatic peoples still recognized. The *Papers* include a letter from Col. Winthrop Sargent, Sept. 8, 1794, describing certain articles found in a mound at Cincinnati, and a letter upon them from Barton to Dr. Priestley. He in the end gave more careful attention to the subject, mainly on its linguistic side, and went farther than any one had gone before him in his *New Views of the Origin of the Tribes and Nations of America* (Philad., 1797; 2d ed., enlarged, 1798).[5] The book attracted much notice, and engaged the attention in some degree of European philologists, and made Barton at that time the most conspicuous student on these matters in America. Jefferson was at that time gathering material in similar studies, but his collections were finally burned in 1801. Barton, in dedicating his treatise to Jefferson, recognized the latter's advance in the same direction. He believed his own gathering of original MS. material to be at that time more extensive than any other student had collected in America. His views had something of the comprehensiveness of his material, and he could not feel that he could point to any one special source of the indigenous population.

During the early years of the present century old theories and new were abundant. The powerful intellect and vast knowledge of Alexander von Humboldt were applied to the problem as he found it in Middle America. He announced some views on the primitive peoples in 1806, in the *Neue Berlinische Monatsschrift* (vol. xv.); but his ripened opinions found record in his *Vues de Cordillères et monumens des peuples indigènes de l'Amérique* (Paris, 1816), and the Asiatic theory got a conservative yet definite advocate.

Hugh Williamson[6] thought he found traces of the Hindoo in the higher arts of the Mexicans, and marks of the ruder Asiatics in the more northern American peoples. A conspicuous littérateur of the day, Samuel L. Mitchell, veered somewhat wildly about in his notions of a Malay, Tartar, and Scandinavian origin.[7] Meanwhile something like organized efforts were making. The American Antiquarian Society was formed in 1812.[8] Silliman began his *Journal of Arts and Sciences* in 1819, and both society and periodical proved instruments of wider inquiry. In the first volume published by the Antiquarian Society, Caleb Atwater, in his treatise on the Western Antiquities, gave the earliest sustained study of the subject, and believed in a general rather than in a particular Asiatic source. The man first to attract attention for his grouping of ascertained results, unaided by personal explorations, however, was Dr. James H. McCulloh, who published his *Researches on America* at Baltimore in 1816. The book passed to a second edition the next year, but received its final shape in the *Researches, philosophical and antiquarian, concerning the aboriginal history of America* (1829), a book which Prescott[1] praised for its accumulated erudition, and Haven[2] ranked high for its manifestations of industry and research, calling it encyclopædic in character. McCulloh examines the native traditions, but can evolve no satisfactory conclusion from them as to the origin of the Americans. The public mind, however, was not ripe for scholarly inquiry, and there was not that in McCulloh's style to invite attention; and greater popularity followed upon the fanciful and dogmatic confidence of John Haywood,[3] upon the somewhat vivid if unsteady speculations of C. S. Rafinesque,[4] and even upon the itinerant Josiah Priest, who boasted of the circulation of thousands of copies of his popular books.[5] John Delafield's *Inquiry into the Origin of the Antiquities of America* (N. Y., 1839) revived the theory, never quite dormant, of the descent of the Mexicans from the riper peoples of Hindostan and Egypt; while the more barbarous red men came of the Mongol stock. The author ran through the whole range of philology, mythology, and many of the customs of the races, in reaching this conclusion. A little book by John McIntosh, *Discovery of America and Origin of the North American Indians*, published in Toronto, 1836, was reissued in N. Y. in 1843, and with enlargements in 1846, *Origin of the North American Indians*, continued down to 1859 to be repeatedly issued, or to have a seeming success by new dates.[6]

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[1] *The United States elevated to Glory and Honor.* New Haven, 1783. It is included in J. W. Thornton's *Pulpit of the Amer. Revolution* (Boston, 1860).

[2] This Canaanite view, though hardly held with the scope given by Dr. Stiles, had been asserted earlier by Gomara, De Lery, and Lescarbot. Cf. *For. Quart. Rev.*, Oct., 1856.

[3] G. H. Loskiel, *Mission of the United Brethren among the Indians, trans. from the German by La Trobe* (London, 1794). Johann Gottlieb Fritsch, *Disputatio historico-geographica in qua quæritur utrum veteres Americam noverint nec ne* (Curæ Regnilianæ, 1796).

[4] *Observations on some Parts of Nat. Hist.*, Lond., 1787.

[5] Pilling, *Bibliog. Siouan languages* (1887, p. 4).

[6] *Hist. North Carolina*, 1811–12.

[7] Haven, *Archæol. U. States*, 35. Cf. Mitchell's papers in the *Archæologia Americana*, i.

[8] There is a fair sample of the conjectural habit of the time in the paper of Moses Fiske, in the first volume of the Society's *Transactions*, 300.

When Columbus, approaching the main land of South America, imagined it a large island, he associated it with that belief so long current in the Old World, which placed the cradle of the race in the Indian Ocean, — a belief which in our day has been advocated by Haeckel, Caspari and Winchell, — and imagined he was on the coasts, skirting an interior, where lay the Garden of Eden.[7] No one had then ventured on the belief that the doctrine of Genesis must be reconciled with any supposed counter-testimony by holding it to be but the record of the Jewish race. Columbus was not long in his grave when Theophrastus Paracelsus, in 1520, and before the belief in the continuity of North America with Asia was dispelled, and consequently before the question of how man and animals could have reached the New World was raised, first broached the heterodox view of the plurality of the human race. All the early disputants on the question of the origin of the American man looked either across the Atlantic or the Pacific for the primitive seed; nor was there any necessary connection between the arguments for an autochthonous American man and a diversity of race, when Fabricius, in 1721, published his *Dissertatio Critica*[8] on the opinions of those who held that different races had been created. From that day the old orthodox interpretation of the record in Genesis found no contestant of mark till the question came up in relation to the American man, it being held quite sufficient to account for the inferiority or other distinguishing characteristics of race by assigning them to the influence of climate and physical causes.[9]

The strongest presentation of the case, in considering the American man a distinct product of the American soil, with no connection with the Old World[10] except in the case of the Eskimos, was made when S. G. Morton, in 1839, printed his *Crania Americana, or a comparative view of the skulls of various aboriginal nations of North and South America*, of which there was a second edition in 1844.[11] Here was a new test, and applied, very likely, in ignorance of the fact that Governor Pownal, in 1766, in Knox's *New Collection of Voyages*, had suggested it.[12] Dr. Morton had gathered a collection of near a thousand skulls from all parts of the world,[13] and based his deductions on these, — a process hardly safe, as many of his successors have determined.[14]

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[1] *Mexico*, Kirk's ed., iii. 375.

[2] *Archæol. U. S.*, 48.

[3] *Hist. of Tennessee*, Nashville, 1823.

[4] Introd. to Marshall's *Kentucky*, 1824; *The Anc. Mts. of N. & S. America*, 2d ed., 1838, etc.

[5] *Amer. Antiq. and Discoveries in the West*, 1833, which Rafinesque thought largely taken from him. Cf. Haven on these writers, pp. 38–41; Sabin, xv. 65, 484.

[6] Pilling, *Bibliog. Siouan languages*, pp. 47, 48.

[7] Peschel, *Races of Men* (London, 1876), p. 32.

[8] Eng. transl. in *Memoirs, Anthropological Society of London*, i. 372.

[9] There is a summary of the progressive conflict on the question of the unity and plurality of races in the introduction to Topinard's *Anthropology*. Cf. Peschel's *Races of Man* (Eng. transl., N. Y., 1876), p. 6.

[10] The idea in general was not wholly new. Capt. Bernard Romans, in his *Concise Nat. Hist. of East and West Florida* (N. Y., 1776), had expressed the opinion "that God created an original man and woman in this part of the globe of different species from any in the other parts" (p. 38). Clavigero, in 1780, believed that the distinct linguistic traits of the Americans pointed to something like an independent origin. Cf. W. D. Whitney on the "Bearing of Languages on the Unity of Man," in *North Amer. Review*, cv. 214.

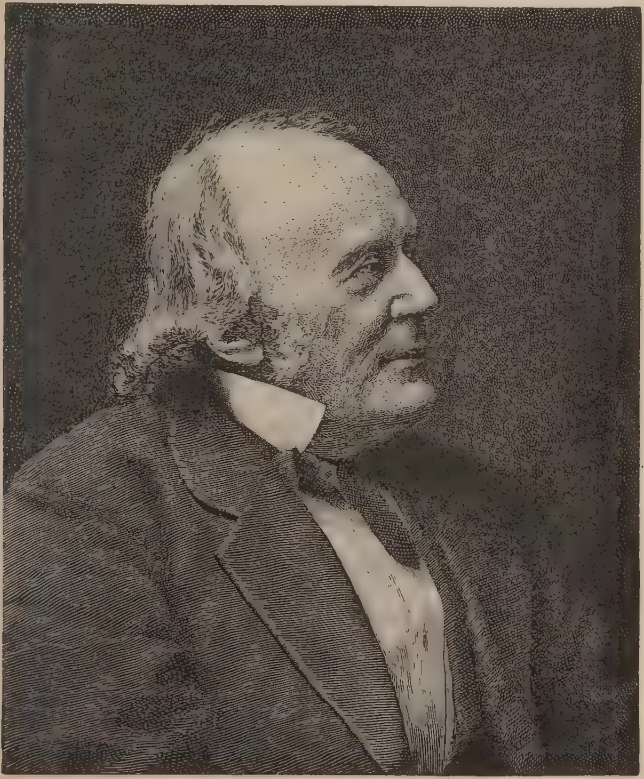
[11] Cf. Jeffries Wyman in *No. Am. Rev.*, li.

[12] Cardinal Wiseman's *Lectures*, 5th ed., London, p. 158.

[13] Described in *Trans. Amer. Ethnol. Soc.*, ii. The collection went to the Acad. of Natural Sciences in Philad., and is examined by Dr. J. Austin Meigs in its *Proc.*, 1860. Cf. Meigs's *Catalogue of human crania in the Acad. Nat. Sci.* (Philad., 1857).

[14] Morton's latest results are given in a paper, "The physical type of the American Indian," left unfinished, but completed by John S. Phillips, and printed in Schoolcraft's *Indian Tribes*, ii. He also printed *An Inquiry into the distinctive characteristics of the Aboriginal Race of America* (Boston, 1842; Philad., 1844); and *Some Observations in the Ethnography and Archæology of the American Aborigines* (N. Haven, 1846, — from the *Amer. Jour. of Science*, 2d ser., ii.). Cf. *Trans. Amer. Ethnol. Soc.* ii. 219. Cf. Allibone's *Dictionary*, ii. 1376. It is certainly

The views of Morton respecting the autochthonous origin of the Indian found an able upholder when Louis Agassiz, taking the broader view of the independent creation of higher and inferior races,[1] gave in his adhesion to the original American man (*Christian Examiner*, July, 1850, vol. xlix. p. 110). These views got more extensive expression in a publication which appeared in Philadelphia in 1854, in which some unpublished papers of Morton are accompanied by a contribution from Agassiz, and all are grouped together and augmented by material of the editors, Dr. Josiah Clark Nott[2] of Mobile, and Mr. George R. Gliddon, long a resident in Cairo. The *Types of Mankind, or Ethnological Researches* (Philad., 1854, 1859, 1871), met with a divided reception; the conservative theologians called it pretentious and false, and there was some color for their detraction in some rather jejune expositions of the Hebrew Scriptures contained in the book. The physiolo-



LOUIS AGASSIZ.*

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evident that skull capacity is no sure measure of intelligence, and the Indian custom of misshaping the head offers some serious obstacles in the study. Cf. Nadaillac, *L'Amér. préhist.*, 512; L. A. Gosse, *Les déformations artificielles du crane* (Paris, 1855); Daniel Wilson's "Indications of Ancient Customs suggested by certain cranial forms," in *Amer. Antiq. Soc. Proc.* (1863); Dabry de Thiersant's *Origine des indiens du Nouveau Monde*, p. 12; W. F. Whitney, on "Anomalies, injuries and diseases of the bones of the native races of No. America," in *Peabody Mus. Rept.*, xviii. 434. On the difficulties of the study see Lucien Carr in *Ibid.* xi. 361; Flower in the *Journal Anthropological Institute*, May, 1885; Dawson, *Fossil Men*, chap. 7. Further see: Anders Retzius, on "The Present State of Ethnology in relation to the form of the human skull," in *Smithson. Rept.*, 1859; Waitz's *Introd. to Anthropology*, Eng. transl., pp. 233, 261; Carl Vogt's *Lectures on Man* (lect. 2); A. Quatrefages and E. T. Hamy, *Crania Ethica* (Paris, 1873-77); Nott and Gliddon, *Types of Mankind;* Nadaillac's *L'Amérique préhist.*, ch. 9, and *Les premiers hommes*, i. ch. 3.

[1] An anonymous book, *The Genesis of Earth and Man* (Edinburgh, 1856), places the negro as the primal stock, and traces out the higher races by variation.

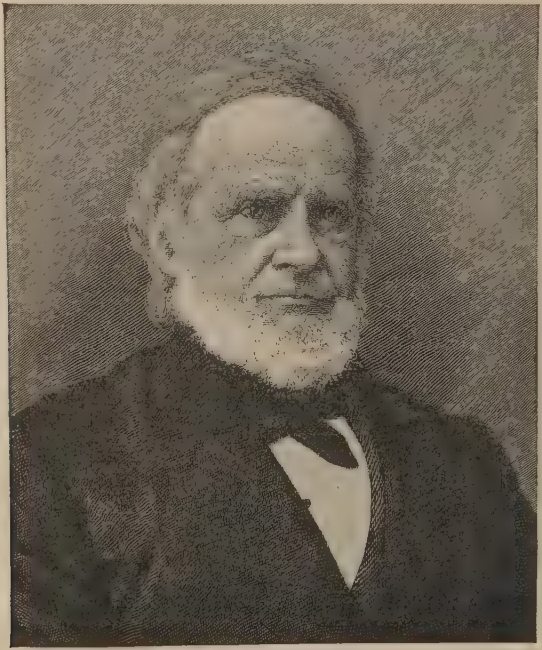
[2] Dr. Nott had given some indication of his views in "An Examination of the physical history of the Jews in its bearing on the question of the Unity of the Races" (*Amer. Asso. Adv. Sci. Proc.*, iii. 1850).

* After a photograph, hanging in the Somerset Club, Boston; suggested to the editor by Mr. Alexander Agassiz as a satisfactory likeness.

gists thought it brought new vigor to a question which properly belonged to science.[1] Other fresh material, with some discussions, made up a new book by the same editors, published three years later, *Indigenous Races of the Earth, or New Chapters of Ethnological Inquiry* (Philad. and London, 1857; 2d ed., 1857).[2]

The theological attacks were not always void of a contempt that ill befitted the work of refutation. The most important of them were John Bachman's *Doctrine of the Unity of the Human Race* (Charleston, S. C., 1850), with his *Notice of the Types of Mankind* (Charleston, 1854–55); and Thomas Smyth's *Unity of the Human Race proved by Scripture, Reason and Science* (N. Y., 1850).[3]

The scientific attack on Morton and Agassiz, and the views they represented, was an active one, and embraced such writers as Wilson, Latham, Pickering, and Quatrefages.[4] The same collection of skulls which had furnished Morton with his proofs yielded exactly opposite evidence to Dr. J. A. Meigs in his *Observa-*



SAMUEL FOSTER HAVEN.*

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[1] Cf. References in Allibone, i. 678; *Poole's Index*, p. 796.

[2] The editor's collaborateurs were Alfred Maury, Francis Palszky, J. Aitken Meigs, J. Leidy, and Louis Agassiz. Nott had in the interval since his previous book furnished an appendix on the unity or plurality of Races to the English transl. of Gobineau's *Moral Diversity of Races* (Philad., 1856).

[3] Haven gives a summary of the arguments of each (p. 90, etc.). For various views on this side see Southall's *Recent Origin of Man*, ch ii. 36, 37, and his *Epoch of the Mammoth*, ch. 2, where he allows that the proofs from traditions and customs are not conclusive; George Palmer's *Migration from Shinar; or, the Earliest Links between the Old and New Continents* (London, 1879); Edward Fontaine's *How the World was Peopled* (N. Y., 1876); Dr. Samuel Forrey in *Amer. Biblical Repository*, July, 1843; McClintock and Strong's *Cyclopædia*, under "Adam"; Henry Cowles' *Pentateuch* (N. Y., 1874), — not to name many others. See *Poole's Index*, 1073.

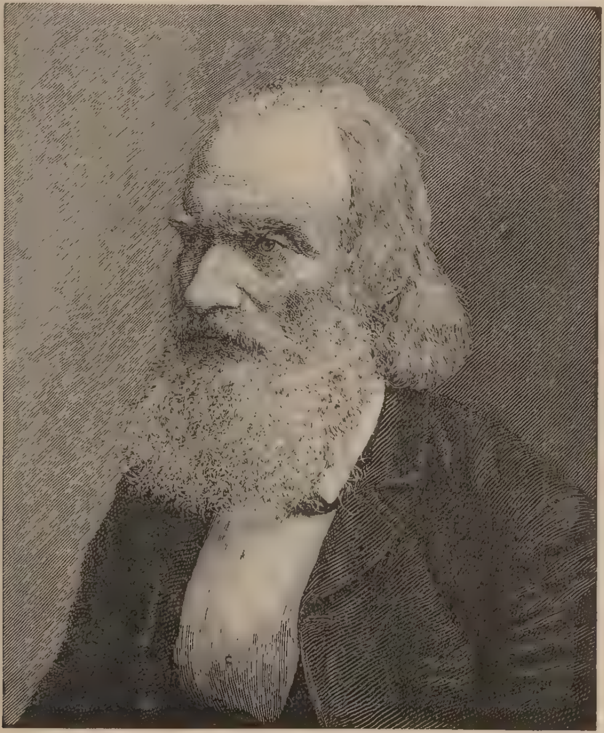
[4] Wilson's first criticism was in the *Canadian Journal* (1857); then in the *Edinburgh Philosophical Journal* (Jan., 1858); in the *Smithsonian Rept.* (1862), p. 240, on the "American Cranial Type;" and in his *Prehist. Man* (ii. ch. 20). Latham's *Nat. Hist. of the Varieties of Man.* Charles Pickering's *Races of Men* (1848). The orthodox monogenism of A. de Quatrefages is expressed in his *De l'unité de l'espèce humaine* (Paris, 1864, 1869); in his *Hist. générale des Races humaines* (Paris, 1887); in his *Human Species* (N. Y., 1879), and in papers in *Revue des Cours Scientifiques*, 1864–5, 1867–8; in his *Nat. Hist. of Man* (Eng. transl., N. Y., 1875); in *Catholic World*, vii. 67; and in *Popular Science Monthly*, i. 61.

Cf. further, Retzius in *Archives des Sciences Naturelles* (Genève, 1845–52); Col. Chas. Hamilton Smith's *Nat. Hist. Human Species* (1848); Dawson in *Leisure Hour*, xxiii.

* After a photograph. A heliotype of a portrait by Custer is in the *Amer. Antiq. Soc. Proc.*, Ap., 1879. Haven's *Annual Reports*, as librarian of the Amer. Antiq. Soc., furnish a good chronological conspectus of the progress of anthropological discovery.

tions upon the Cranial Forms of the American Aborigines (Philad., 1866).[1] Two of the most celebrated of the evolutionists reject the autochthonous view, for Darwin's *Descent of Man* and Haeckel's *Hist. of Creation* consider the American man an emigrant from the old world, in whatever way the race may have developed.[2]

Of the leading historians of the early American peoples, Prescott, dealing with the Mexicans, is inclined to agree with Humboldt's arguments as to their primitive connection with Asia.[3] Geo. Bancroft, in the third volume of his *Hist. of the United States* (1840), surveying the field, found little in the linguistic affinities, little in what Humboldt gathered from the Mexican calendars and from other developments, nothing from the Western mounds, which he was sure were natural earth-knobs and water-worn passages,[4] and decides upon some transmission by the Pacific route from Asia, but so remote as to make the American tribes practically indigenous, so far as their character is concerned.



SIR DANIEL WILSON, LL. D., F. R. S. E.*

813, and in his *Fossil Men*, p. 334, who holds the biblical account to be "the most complete and scientific;" Figuier's *World before the Deluge* (N. Y., 1872), p. 469. Geo. Bancroft sees no signs to reverse the old judgment respecting a single human race.

[1] He found all three varieties of skulls in America: the long-headed (dolichocephalic), the short-headed (brachycephalic), and the medium (mesocephalic). He found the long heads to predominate, except in Peru. Meigs had earlier studied the subject in his *Observations on the Form of the Occiput* (Philad., 1860). Cf. Busk in *Jour. Anthrop. Inst.*, April, 1873; Wyman, in *Peab. Mus. Rept.*, 1871.

[2] H. H. Bancroft, *Nat. Races*, v. 129, 131, gives references on the autochthonous theory. It is held by Nadaillac, *Les premiers hommes*, ii. 117; Fred. von Hellwald in *Smithsonian Rept.*, 1866; Bollaert's "Contribution to an Introduction to the Anthropology of the New World" in *Memoirs, Anthrop. Society of London*, ii. 92; F. Müller, *Allgemeine Ethnographie;* and Simonin, *L'homme Américain* (Paris, 1870). F. W. Putnam (*Report* in *Wheeler's Survey*, vii. p. 18) says: "The primitive race of America was as likely autochthonous and of Pliocene age as of Asiatic origin." The autochthonous view is probably losing ground. Dall, in ch. 10, appended to the English translation of Nadaillac's *Prehistoric America*, sums up the prevailing arguments against it. Cf. also Dabry de Thiersant's *Origine des Indiens du Nouveau Monde*, ch. 1.

[3] Cf. also Prescott's *Essays*, 224.

[4] This view has necessarily been abandoned in his later editions. Cf. orig. ed., iii. 307; and final revision, ii. 130.

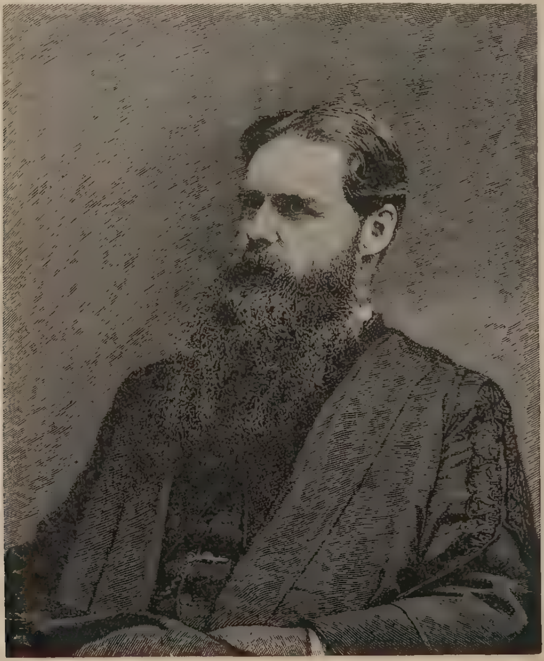
* From a photograph kindly furnished, on request, by Professor Wilson's family.

In 1843 another compiler of existing evidence appeared in Alexander W. Bradford in his *American Antiquities, or Researches into the origin and history of the Red Race.* His views were new. He connects the higher organized life of middle America with the corresponding culture of Southern Asia, the Polynesian islands probably furnishing the avenue of migrations: while the ruder and more northern peoples of both shores of the Pacific represent the same stock degraded by northern migrations.

In 1845 the American Ethnological Society began its publications, and in Albert Gallatin it had a vigorous helper in unravelling some of these mysteries. A few years later (1853) the United States government lent its patronage and prestige to the huge conglomerate publication of Schoolcraft, his *Indian Tribes of the United States*, which leaves the bewildered reader in a puzzling maze, — the inevitable result of a work undertaken beyond the ambitious powers of an untrained mind. The work is not without value if the user of it has more systematic knowledge than its compiler, to select, discard, and arrange, and if he can weigh the importance of the separate papers.[1]

In 1856 Samuel F. Haven, the librarian and guiding spirit of the American Antiquarian Society, summed up, as it had never been done before, for comprehensiveness, and with a striking prescience, the progress and results of studies in this field, in his *Archæology of the United States* (*Smithsonian Contributions*, viii., Washington, 1856).

In 1851 Professor Daniel Wilson, in his *Prehistoric Annals of Scotland*, first brought into use the designation "prehistoric" as expressing "the whole period disclosed to us by means of archæological evidence, as distinguished from what is known through written records: and in this sense the term was speedily adopted by the archæologists of Europe."[2] Eleven years later he published his *Prehistoric Man: Researches into the*



EDWARD B. TYLOR.*

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[1] Haven at the end of his second chapter tries to place Schoolcraft, and he does better than one would expect, at that day. For Schoolcraft's special notes on Antiquities see his vol. i. p. 44; ii. 83; iii. 73; iv. 113; v. 85, 657. For bibliography see Pilling, Sabin, Field, etc.

[2] Again he says: "Man may be assumed to be prehistoric wherever his chroniclings of himself are undesigned, and his history is wholly recoverable by induction. The term has, strictly speaking, no chronological significance; but in its relative application corresponds to other archæological, in contradistinction to geological periods." Of America he says: "A continent where man may be studied under circumstances which seem to furnish the best guarantee of his independent development." Dawkins (*Cave hunting*, 136) says: "For that series of events which extends from the borders of history back to the remote age,

* After a photograph.

origin of civilization in the old and new world.[1] The book unfortunately is not well fortified with references, but it is the result of long study, partly in the field, and written with a commendable reserve of judgment. It is in the main concerned with the western hemisphere, which he assumes with little hesitation "began its human period subsequent to that of the old world, and so started later in the race of civilization." While thus in effect a study of early man in America, its scope makes it in good degree a complement to the *Origin of Civilization* of Lubbock.

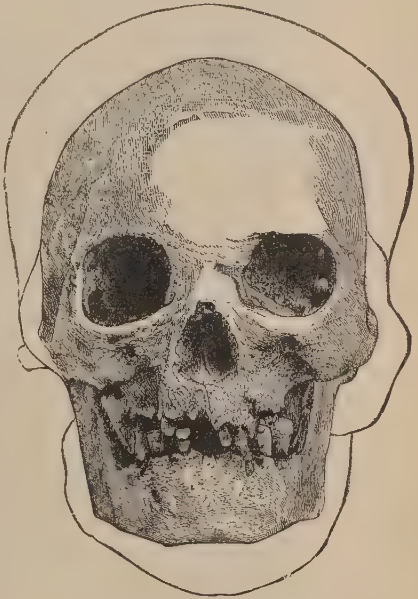
The comparative study of ethnological traces, to enable us to depict the earliest condition of human society, owes a special indebtedness to Edward B. Tylor, among writers in English. It is nearly twenty-five years since he first published his *Researches into the Early History of Mankind and the Development of Civilization*,[2] the work almost, if not quite, of a pioneer in this interesting field, and he has supplied the reader with all the references necessary to test his examples. Max Müller (*Chips*, ii. 262) has pointed out how he has vitalized his vast accumulation of facts by coherent classifications instead of leaving them an oppressive burden by simple aggregation, as his precursors in Germany, Gustav Klemm[3] and Adolf Bastian,

where the geologist, descending the stream of time, meets the archæologist, I have adopted the term *prehistoric*."

The divisions of prehistoric time now most commonly employed are: For the oldest, the Palæolithic age, as Lubbock first termed it, which, with a shadowy termination, has an unknown beginning, covering an interval geologically of vast extent. It is the primitive stone age, the epoch of flint-chippers; and but a single positive vestige of any community of living is known to archæologists: the village of Solutré, in Eastern France, being held by some to be associated with man in this earlier stage of his development. This stone period is sometimes divided in Europe into an earlier and later period, representing respectively the men of the river drift and of the caves. In the first period, called sometimes that of the race of Canstadt, and by Mortillet the Chellean period, we have, as is claimed, a savage hunter race, represented by the Neanderthal skull; and because in two jaw-bones discovered the genial tubercle is undeveloped, a school of archæologists contend that the race was speechless (Horatio Hale's "Origin of Language," in *Am. Asso. Adv. Sci. Proc.*, xxxv., Cambridge, 1886; and separate, p. 31). This theory, however, seems to rest on a misconception. Cf. Topinard on the jaw-bone from the Naulette cave in the *Revue d'Anthropologie*, 3d ser. i., p. 422 (1886). It is held that the ethnical relations of this race are unknown, and it is not palpably connected with the race of the later period, the race of the caves, which archæologists, like Carl Vogt, Lartet, and Christy, call the cave-bear epoch, as its evidences are found in the cave deposits of Europe.

This cave race is represented by the Cromagnon skull, and, as Dawkins holds, is perpetuated to-day by the Eskimo, and was very likely also represented in the Guanches of the Canary Islands. Quatrefages calls it the race of Cromagnon; and the vanishing of it into the Neolithic people is obscure. It is claimed by some, but the evidence is questionable, that the development of the muscles of speech make this race the first to speak, and that thus man, as a speaking being, is probably not ten thousand years old.

The interval before the shaped and polished stone implements were used may have been long in some places, and the gradation may have been confused in others; and it is indeed sometimes said that the one and the other condition exist in savage regions at the present day, as many archæologists hold that they have always existed, side by side, though this proposition is also denied. Indeed, it is a question if the terms of the archæologist, signifying ages or epochs, have any time value, being rather characteristics of stages of development than of passing time. Those who find the ruder implements to stand for a people living with the cave-bear find, as they contend, a shorter-headed race producing these finer stone implements, and call it the Reindeer epoch. One of Lubbock's terms, the Neolithic age, has gained larger acceptance as a designation for this period since 1865, when he introduced it. With these polished stones we first find signs of domestic animals and of the practice of agriculture. Any considerable collection of these stone implements and ornaments will present to the observer great varieties, but with steady types, of such implements as axes, celts, hammers, knives, drills, scrapers, mortars and pestles, pitted stones, plummets, sinkers, spear-points, arrow-heads, daggers, pipes, gorgets, — not to name others.



FROM DAWSON'S FOSSIL MEN.*

On the American stone age, see Nadaillac, *Les premiers hommes*, p. 37; L. P. Gratacap in *Amer. Antiquarian*, iv.; and W. J. McGee, in *Pop. Sci. Monthly*, Nov., 1888, for condensed views; but the student will prefer the more enlarged views of Rau, Abbott and others.

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[1] Cambridge, Eng., 1862; revised, 1865; and largely rewritten, London, 1876. Cf. his "Pre-Aryan American Man," in the *Roy. Soc. Canada Trans.*, i., 2d sect., 35, and his "Unwritten History" in *Smithsonian Rept.* (1862).

[2] London, 1865, 1870; N. Y., 1878.

[3] Tylor speaks of Klemm's *Allgemeine Culturgeschichte der Menschheit* and his *Allgemeine Culturwissenschaft* as containing "invaluable collections of facts bearing on the history of civilization."

* A front view of a Hochelagan skull, surrounded by the outline, on a larger scale, of the Cromagnon skull.

had done; and it is remarked that while thus classifying, he has not been lured into pronounced theory, which future accession of material might serve to modify or change. He shortly afterwards touched a phase of the subject which he had not developed in his book in a paper on "Traces of the Early Mental Condition of Man,"[1] and illustrated the methods he was pursuing in another on "The Condition of Prehistoric Races as inferred from observations of modern tribes."[2]

The postulate of which he has been a distinguished expounder, that man has progressed from barbarism to civilization, was a main deduction to be drawn from his next sustained work, *Primitive Culture: researches into the development of mythology, philosophy, religion, art, and custom.*[3] The chief points of this further study of the thought, belief, art, and custom of the primitive man had been advanced tentatively in various other papers beside those already mentioned,[4] and in this new work he further acknowledges his obligations to Adolf Bastian's *Mensch in der Geschichte* and Theodor Waitz's *Anthropologie der Naturvölker.*[5] He still pursued his plan of collecting wide and minute evidence from the writers on ethnography and kindred sciences, and from historians, travellers, and missionaries, as his foot-notes abundantly testify.

THEODOR WAITZ.*

These studies of Professor Tylor abundantly qualified him to give a condensed exposition of the science of anthropology, which he had done so much to place within the range of scientific studies, by a primary search for facts and laws; and having contributed the article on that subject to the ninth edition of the *Encyclopædia Britannica*, he published in 1881 his *Anthropology: an Introduction to the study of man and civilization* (London and N. Y., 1881 and 1888). He maps out the new science, which has now received of late years so many new students in the scientific method, without references, but with the authority of a teacher, tracing what man has been and is under the differences of sex, race, beliefs, habits, and society.[6] Again, at the

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[1] *Royal Inst. of Gt. Brit. Proc.*, reprinted in *Smithsonian Rept.*, 1867.

[2] *Internat. Cong. Prehist. Archæol. Trans.*, 1868.

[3] London, 1871; 2d ed., 1874, somewhat amplified; Boston, 1874; N. Y., 1877.

[4] See preface to *Primitive Culture*, 1st ed.

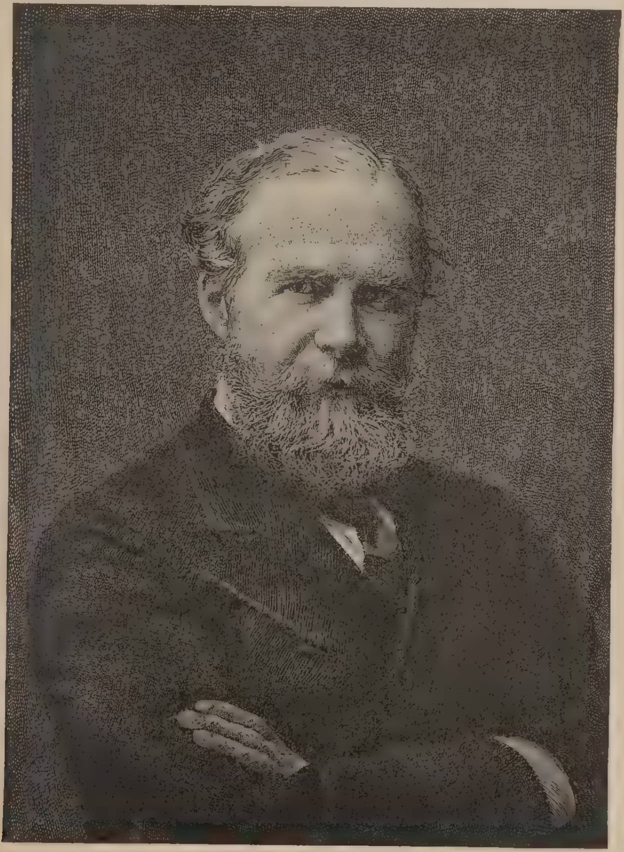
[5] Vols. iii. and iv. of this treatise (Leipzig, 1862–64) are given to "Die Amerikaner," and are provided with a list of books on the subject, and ethnological maps of North and South America. Brinton (*Myths*, p. 40) thinks it the best work yet written on the American Indians, though he thinks that Waitz errs on the religious aspects. Waitz has fully discussed the question of climate as affecting the development of people, and this is included with full references in that part of his great work which in the English translation is called an *Introduction to Anthropology*. Wallace and other observers contend that the direct efficacy of physical conditions is overrated, and that climate is but one of the many factors. F. H. Cushing discusses the question of habitation as affected by surroundings in the *Fourth Ann. Rept. Bur. of Ethnol.*, p. 473.

[6] Cf. Quatrefages' *Les Progrès de l'Anthropologie* (Paris, 1868), and Paul Topinard's *Anthropology* (English translation, London, 1878). Quatrefages (*Human Race*, New York, 1879) explains the anthropological method (p. 27).

* After a likeness in Otto Caspari's *Urgeschichte der Menschheit*, 2d ed., vol. i. (Leipzig, 1877).

Montreal meeting (August, 1884) of the British Association for the Advancement of Science, he set down in an address the bounds of the "American Aspects of Anthropology."[1]

Closely following upon Tylor in this field, and gathering his material with much the same assiduity, and presenting it with similar beliefs, though with enough individuality to mark a distinction, was another Englishman, who probably shares with Tylor the leading position in this department of study. Sir John Lubbock, n his *Prehistoric Times as illustrated by ancient remains, and the manners and customs of modern savages*,[2] gathered the evidence which exists of the primitive condition of man, embracing some chapters on nodern savages so far as they are ignorant of the use of metals, as the best study we can follow, to fill out



SIR JOHN LUBBOCK.*

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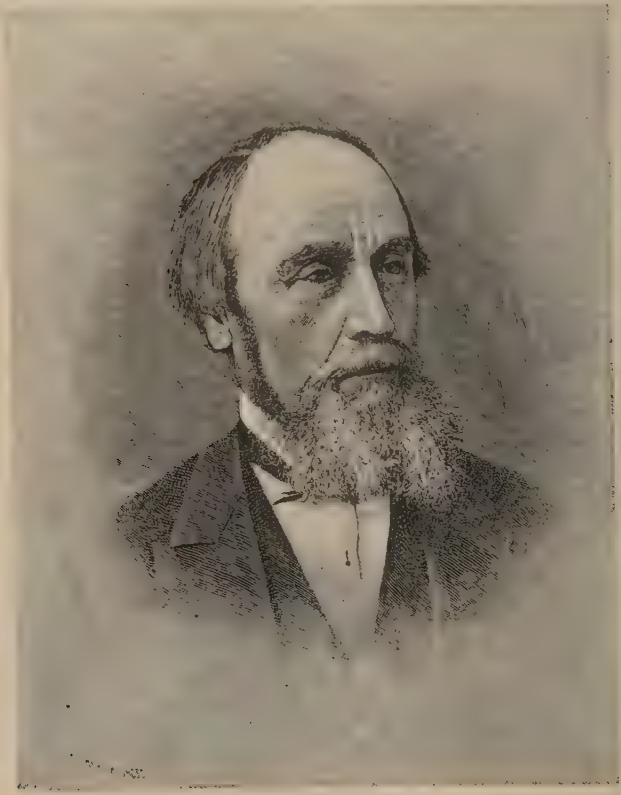
[1] Given in *Popular Science Monthly*, Dec., 1884, p. 152; d in the same periodical p. 264, is an account and portrait Tylor.

[2] London, N. Y., 1865; 2d ed. somewhat enlarged, Lond., 69; and later. Part of this work had appeared earlier in e *National Hist. Review*, 1861–64, including a paper (ch. on No. Amer. Archæology in Jan., 1863, which was reinted in the *Smithsonian Report* for 1862, and was transted in the *Revue Archéologique*, 1865.

This book of Lubbock's and Tylor's correlative work obably represent the best dealing with the subject in nglish; and some such book as Jas. A. Farrer's *Primie Manners and Customs* (N. Y., 1879) will lead up to them with readers less studious. The English reader may find some comparative treatments in the English version of Waitz's *Introd. to Anthropology* (p. 284), etc.; much that is suggestive and in some way supplemental to Tylor and Lubbock in Wilson's *Prehistoric Man*; some vigorous and perhaps sweeping characterizations in Lesley's *Origin and Destiny of Man* (ch. 6); and other aspects in Winchell's *Preadamites* (ch. 26), Foster's *Prehistoric Races of the U. S.* (ch. 9), F. A. Allen in *Compte Rendu, Congrès des Américanistes*, 1877, vol. i. 79. Humboldt points out the non-pastoral character of the American tribes (*Views of Nature*, ii. 42). Helps' *Realmah* deals with the prehistoric condition of man.

* After a photograph.

the picture of races only archæologically known to us. This study of modern savage life, in arts, marriages, and relationships, morals, religion, and laws, is, as he holds, a necessary avenue to the knowledge of a condition of the early man, from which by various influences the race has advanced to what is called civilization. His result in this comparative study — not indeed covering all the phases of savage life — he made known in his *Origin of Civilization and the Primitive Condition of Man*.[1] While referring to Tylor's *Early Hist. of Mankind* as more nearly like his own than any existing treatise, but showing, as compared with his own book, "that no two minds would view the subject in the same manner," he instanced previous treatments of certain phases of the subject, like Müller's *Geschichte der Amerikanischen Urreligionen*, J. F. M'Lennan's *Primitive Marriage*,[2] and J. J. Backofen's *Das Mutterrecht* (Stuttgart, 1861); and even Lord Kames' *History of Man*, and Montesquieu's *Esprit des Lois*, notwithstanding the absence in them of much of the minute knowledge now necessary to the study of the subject. These data, of course, are largely obtained from travellers and missionaries, and Lubbock complains of their unsatisfactory extent and accuracy. "Travellers," he adds, "find it easier to describe the houses, boats, food, dress, weapons, and implements of savages than to understand their thoughts and feelings."



SIR JOHN WILLIAM DAWSON.*

The main controversial point arising out of all this study is the one already adverted to, — whether man has advanced from savagery to his present condition, or has preserved, with occasional retrogressions, his original elevated character; and this causes the other question, whether the modern savage is the degenerate descendant of the same civilized first men. "There is no scientific evidence which would justify us," says Lubbock (*Prehist.*

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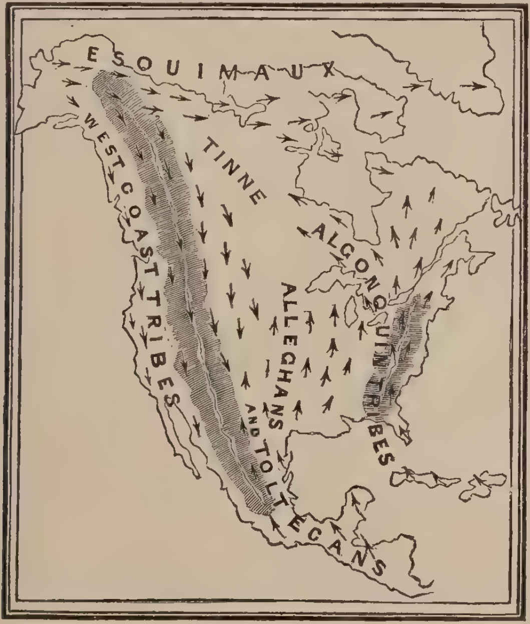
[1] London, N. Y., 1870; 2d ed.; 3d ed., 1875; 4th ed., 1882, — each with additions and revisions.

[2] Cf. his *Studies in Anc. Hist.* He elucidates the early practice of capturing a wife, and controverts Morgan's *Ancient Society*. Cf. W. F. Allen in *Penn. Monthly*, June, 1880.

* After a photograph.

Times, 417), "in asserting that this kind of degradation applies to savages in general."[1] The most distinguished advocate of the affirmative of this proposition is Richard Whately, Archbishop of Dublin, both in his *Political Economy* and in his lecture on the *Origin of Civilization* (1855), in which he undertook to affirm hat no nation, unaided by a superior race, ever succeeded in raising itself out of savagery, and that nations an become degraded. Lubbock, who, with Tylor, holds the converse of this proposition, answered Whately in n appendix to his *Origin of Civilization*, which was originally given as a paper at the Dundee meeting of he British Association.[2] The Duke of Argyle, while not prepared to go to the extent of Whately's views, ttacked, in his *Primeval Man*, Lubbock's argument,[3] and was in turn reviewed adversely by Lubbock, in a aper read at the Exeter meeting of the same association (1869), which is also included in the appendix of is *Origin of Civilization*. Lubbock seems to show, in some instances at least, that the duke did not possess imself correctly of some of the views of his opponents.

In the researches of Tylor and Lubbock, and of all the others cited above, the American Indian is the source



MIGRATIONS.*

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[1] Cf. also his "Early Condition of Man," in *British ss. Proc.*, 1867; and Lyell's *Principles of Geology*, 11th d., ii. 485; Dawkins in *No. Amer. Rev.*, Oct., 1883, p. 48.

[2] Darwin took Lubbock's side, *Descent of Man*, i. 174. radford, in his *American Antiquities*, held the barbarous merican to be a degraded remnant of a society originally ore cultivated; and a similar view was held by S. F. Jarvis in his *Discourse* before the New York Hist. Soc. (Proc., iii., N. Y., 1821). Cf. Büchner's *Man*, Eng. transl., 67, 276. Rawlinson (*Antiquity of man historically considered*) considers savagery a "corruption and degradation, — the result of adverse circumstances during a long period."

[3] N. Y., 1869; originally in *Good Words*, Mar.–June, 1868.

* A sketch map given in Dawson's *Fossil Men*, p. 48, showing his view of the probable lines of migration and distribuion of the American tribes. Morgan (*Ancient Society*) makes what he calls three centres of subsistence, whence the igration proceeded which overran America. Cf. Hellwald in *Smithsonian Rept.*, 1866, p. 328. The question is more r less discussed in Latham's *Man and his migrations* (London, 1851); Chas. Pickering's *Men and their geog. disribution*; and Oscar Peschel's *Races of Man* (Eng. transl., London, 1876). On the passage from the valley of the olumbia to that of the Missouri, see Humboldt's *Views of Nature*, 35. Morgan (*No. Am. Rev.*, cix.) supposes the alley of the Columbia River to be the original centre where the streams diverged, and (*Systems of Consanguinity*, 51) says there are reasons for believing that the Shoshone migration was the last which left the Columbia valley, and hat it was pending at the epoch of European colonization. Morgan's papers in the *No. Am. Rev.*, Oct. 1868 and Jan. 870, are reprinted in Beach's *Indian Miscellany*, p. 158. On a general belief in a migration from the north, see *Congrès es Amér.* (1877), ii. 50, 51. L. Simonin, in "L'homme Américain, notes d'ethnologie et de linguistique sur les indiens es Etats-Unis," gives a map of the tribes of North America in the *Bull. de la Soc. de Géog.* Feb. 1870.

of many of their illustrations. Of all writers on this continent, Sir John Wm. Dawson in his *Fossil Men*, and Southall in his *Recent Origin of Man*, are probably the most eminent advocates of the views of Whately and Argyle, however modified, and both have declared it an unfounded assumption that the primitive man was a savage.[1] Morgan, in his *Ancient Society* (N. Y., 1877), has, on the other hand, sketched the lines of human progress from savagery through barbarism to civilization.

One of the defenders of the supposed Bible limits best equipped by reading, if not in the scientific spirit, has been a Virginian, James C. Southall, who published a large octavo in 1875, *The Recent Origin of Man as illustrated by geology and the modern science of prehistoric archæology* (Philad., 1875). Three years later, — leaving out some irrelevant matters as touching the antiquity of man, condensing his collations of detail, sparing the men of science an attack for what in his earlier volume he called their fickleness, and somewhat veiling his set purpose of sustaining the Bible record, — he published a more effective little book, *The Epoch of the Mammoth and the Apparition of Man upon Earth* (Philad., 1878). Barring its essentially controversial character, and waiving judgment on its scientific decisions, it is one of the best condensed accumulations of data which has been made. His belief in the literal worth of the Bible narrative is emphatic. He thinks that man, abruptly and fully civilized, appeared in the East, and gave rise to the Egyptian and Babylonian civilization, while the estrays that wandered westward are known to us by their remains, as the early savage denizens of Europe. To maintain this existence of the hunter-man of Europe within historic times, he rejects the prevailing opinions of the geologists and archæologists. He reverses the judgment that Lyell expresses (*Student's Elements of Geology*, Am. ed., 162) of the historical period as not affording any appreciable measure for calculating the number of centuries necessary to produce so many extinct animals, to deepen and widen valleys, and to lay so deep stalagmite floors, and says it does. He contends that the stone age is not divided into the earlier and later periods with an interval, but that the mingling of the kinds of flints shows but different phases of the same period,[2] and that what others call the palæolithic man was in reality the quaternary man, with conditions not much different from now.[3] The time when the ice retreated from the now temperate regions he holds to have been about 2000 B. C., and he looks to the proofs of the action of which traces are left along the North American great lakes, as observed by Professor Edmund Andrews[4] of Chicago, to confirm his judgment of the Glacial age being from 5,300 to 7,500 years ago.[5] He claims that force has not been sufficiently recognized as an element in geological action, and that a great lapse of time was not necessary to effect geological changes (*Ep. of the M.*, 194).[6] He thinks the present drift of opinion, carrying back the appearance of man anywhere from 20,000 to 9,000,000 years, a mere fashion. The gravel of the Somme has been, he holds, a rapid deposit in valleys already formed and not necessarily old. The peat beds were a deposit from the flood that followed the glacial period, and accumulated rapidly (*Ep. of the M.*, ch. 10). The extinct animals found with the tools of man in the caves simply show that such beasts survived to within historic times, as seems everywhere apparent as regards the mastodon when found in America. The stalagmites of the caves are of unequal growth, and it is an assumption to give them uniformly great age. The finely worked flints found among those called palæolithic; the skilfully free drawings of the cave-men; the bits of pottery discovered with the rude flints, and the great similarity of the implements to those in use to-day among the Eskimos; the finding of Roman coin in the Danish shell heaps and an English one in those of America (*Proc. Philad. Acad. Nat. Sci.*, 1866, p. 291), — are all parts of the argument which satisfies him that the archæologists have been hasty and inconclusive in their deductions. They in turn will dispute both his facts and conclusions.[7]

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[1] Dawson's *Fossil Men and their modern representatives* (London, 1880, 1883) is "an attempt to illustrate the characters and conditions of prehistoric men in Europe by those of the American races." A conservative reliance on the biblical record, as long understood, characterizes Dawson's usual speculations. Cf. his *Nature and the Bible*, his *Story of the Earth*, his *Origin of the World*, and his *Address* as president of the geological section of the Amer. Association in 1876. He confronts his opponents' views of the long periods necessary to effect geographical changes by telling them that in historic times "the Hyrcanian ocean has dried up and Atlantis has gone down."

[2] Dawson (*Fossil Men*, 218) says: "I think that American archæologists and geologists must refuse to accept the distinction of a palæolithic from a neolithic period until further evidence can be obtained."

[3] These are very nearly the views of Winchell in his *Preadamites*, p. 420.

[4] Cf. his papers in *Methodist Quarterly*, xxxvi. 581; xxxvii. 29.

[5] This is also considered important evidence by Dawson, as well as Winchell's estimate, in his *5th Report, Minnesota Geol. Survey* (1876), of the 8,000 or 9,000 years necessary for the falls of St. Anthony to have worked back from Fort Snelling. Edw. Fontaine's *How the World was peopled* (N. Y., 1872) is another expression of this recent-origin belief.

[6] This cataclysmic element of force, as opposed to the gradual uniformity theory of Lyell, finds expounders in Huxley and Prestwich, and is the burden of H. H. Howorth's *Mammoth and the Flood* (London, 1887) in its palæontological and archæological aspects, its geological aspects having been touched by him so far only in some papers in the *Geological Mag.* This great overthrow of the gigantic animals, during which the man intermediate between the palæolithic and neolithic age lived, was not universal, so that the less unwieldy species largely saved themselves; and it was in effect the scriptural flood, of which traditions were widely preserved among the North American tribes (*Mammoth and the Flood*, 307, 444).

[7] Southall answered his detractors in the *Methodist Quarterly*, xxxvii. 225. Geo. Rawlinson (*Antiq. of Man historically considered*, *Present Day Tract*, *No. 9*, or *Journal of Christian Philosophy*, April, 1883) speaks of the antiquity of prehistoric man as involving considerations "to a large extent speculative" as to limits, "that are to be measured not so much by centuries as by millenia." He condenses the arguments for a recent origin of man.

Southall's arraignment of the opinions generally held may introduce us to a classification of the data upon which archæologists rely to reach conclusions upon the antiquity of man, and over some of which there is certainly no prevailing consensus of opinion. We may find a condensed summary of beliefs and data respecting the antiquity of man in J. P. Maclean's *Manual of the Antiquity of Man* (Cincinnati, revised ed., 1877; again, 1880).[1] The independent view and conservative spirit are placed respectively in juxtaposition in J. P. Lesley's *Origin and Decline of Man* (ch. 3), and in Dawson's *Fossil Men* (ch. 8).[2] The opinions of leading English archæologists are found in Lubbock's *Prehistoric Times* (ch. 12), Wallace's *Tropical Nature* (ch. 7), and Huxley's "Distribution of Races in Relation to the Antiquity of Man," in *Internat. Cong. of Prehist. Archæol. Trans.* (1868). Dawkins has given some recent views in *The Nation*, xxvi. 434, and in *Kansas City Review*, vii. 344.[3] Not to refer to special phases, the French school will be found represented in Nadaillac's *Les Premiers Hommes* (ii. ch. 13); in Gabriel de Mortillet's *La préhistorique antiquité de l'homme* (Paris, 1883); Hamy's *Précis de paléontologie humaine;* Le Hon's *L'homme fossile* (1867); Victor Meunier's *Les Ancêtres d'Adam* (Paris, 1875); Joly's *L'homme avant métaux* (Eng. transl. *Man before Metals*, N. Y., 1883); *Revue des Questions historiques* (vol. xvi.). The German school is represented in Haeckel's *Natürliche Schöpfungsgeschichte;* Waitz's *Anthropologie;* Carl Vogt's *Lectures on Man* (Eng. transl., Lond., 1864); and L. Büchner's *Der Mensch und seine Stellung in der Natur* (2d ed., Leipzig, 1872; or W. S. Dallas's Eng. translation, Lond., 1872). The history of the growth of geological antagonism to the biblical record as once understood, and the several methods proposed for reconciling their respective teaching, is traced concisely in the article on geology in M'Clintock and Strong's *Cyclopædia*, with references for further examination. The views there given are those propounded by Chalmers in 1804, that the geological record, ignored in the account of Genesis, finds its place in that book between the first and second verses,[4] which have no dependence on one another, and that the biblical account of creation followed in six literal days. What may be considered the present theological attitude of churchmen may be noted in *The Speaker's Commentary* (N. Y. ed., 1871, p. 61).

The question of the territorial connection of America with Asia under earlier geological conditions is necessarily considered in some of the discussions on the transplanting of the American man from the side of Asia.

Otto Caspari in his *Urgeschichte der Menschheit* (Leipzig, 1873), vol. i., gives a map of Asia and America in the post-tertiary period, as he understands it, which stretches the Asiatic and African continents over a large part of the Indian Ocean; and in this region, now beneath the sea, he places the home of the primeval man, and marks the lines of migration east, north, and west. This view is accepted by Winchell in his *Preadamites* (see his map). Haeckel (*Nat. Schöpfungsgeschichte*, 1868, 1873; Eng. transl. 1876) calls this region "Lemuria" in his map. Caspari places large continental islands between this region and South America, which rendered migration to South America easy. The eastern shore of the present Asia is extended beyond the Japanese islands, and similar convenient islands render the passage by other lines of immigration easy to the regions of British Columbia and of Mexico. (Cf. Short, 507; Baldwin, App.) Howorth, *Mammoth and the Flood*, supposes a connection at Behring's Straits. The supposed similarity of the flora of the two shores of the Pacific has been used to support this theory, but botanists say that the language of Hooker and Gray has been given a meaning they did not intend. It is opposed by many eminent geologists. A. R. Wallace (*Journal Amer. Geog. Soc.*, xix.) finds no ground to believe that any of the oceans contain sunken continents. (Cf. his *Geographical Distribution of Animals* and his *Malay Archipelago*.) James Croll in his *Climate and Cosmology* (p. 6) says: "There is no geological evidence to show that at least since Silurian times the Atlantic and Pacific were ever in their broad features otherwise than they now are."[5] Hyde Clarke has examined the legend of Atlantis in reference to protohistoric communication with America, in *Royal Hist. Soc. Trans.*, n. s., iii. p. 1.[6]

The arguments for the great antiquity of man[7] are deduced in the main from the testimony of the river gravels, the bone caves, the peat deposits, the shell heaps, and the Lacustrine villages, for the mounds and other relics of defence, habitation, and worship are very likely not the records of a great antiquity. The whole field is surveyed with more fullness than anywhere else, and with a faith in the geological antiquity of the race, in Sir Charles Lyell's *Geological Evidences of the Antiquity of Man.*[1] With as firm a belief in the integrity of the biblical record, and in its not being impugned by the discoveries or inductions of science, we find a survey in Southall's *Recent Origin of Man.* These two books constitute the extremes of the methods, both for and against the conservative interpretation of the Bible. The independent spirit of the scientist is nowhere more confidently expressed than by J. P. Lesley (*Man's Origin and Destiny*, Philad., 1868, p. 45), who says: "There is no alliance possible between Jewish theology and modern science. . . . Geologists have won the right to be Christians without first becoming Jews." Southall[2] interprets this spirit in this wise: "I do not recollect that the *Antiquity of Man* ever recognizes that the book of Genesis is in existence; and yet every one is perfectly conscious that the author has it in mind, and is writing at it all the time."[3] The entire literature of the scientific interpretation shows that the canons of criticism are not yet secure enough to prevent the widest interpretations and inferences.

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[1] There is a cursory survey in John Scoffern's *Stray leaves of science and folk lore* (London, 1870).

[2] Cf. his papers in *Leisure Hour*, xxiii. 740, 766; xxvi. 54.

[3] Current periodical views can be traced in Poole's *Index* (vols. i. and ii.) under "Man," "Races," "Prehistoric," etc.

The views of the cosmogonists, running back to the beginning of the sixteenth century, are followed down to the birth of modern geology in Pattison's *The Earth and the Word* (Lond., 1858), and condensed in M'Clintock & Strong's *Cyclopædia* (iii. 795).

[4] *Verse* 1. In the beginning God created the heaven and the earth.

Verse 2. And the earth was without form and void, etc.

[5] Cf. also J. D. Whitney's *Climatic Changes*. The present proportion of land to water is reckoned as four is to eleven. The ocean's average depth is variously estimated at from eleven to thirteen times that of the average elevation of land above water, or as 11,000 or 13,000 feet is to 1,000 feet. The bulk of water on the globe is computed at thirty-six times the cubic measurement of the land above water (*Ibid.* 194, 209).

[6] For an extended discussion of the Atlantis question, see *ante*, ch. 1.

[7] It is enough to indicate the necessary correlation of this subject with the transformation theory of J. B. A. Lamarck as enunciated in his *Philosophie Zoologique* (Paris, 1809; again, 1873), which Cuvier opposed; and with the new phase of it in what is called Darwinism, a theory of the survival of the fittest, leading ultimately to man. Lyell (*Principles of Geology*, 11th ed., ii. 495) presents the diverse sides of the question, which is one hardly germane to our present purpose.

The intimations which are supposed to exist in the Bible of a race earlier than Adam have given rise to what is called the theory of the Preadamites, and there is little noteworthy upon it in European literature back of Isaac de La Peyrère's *Praeadamitae* (Paris and Amsterdam, 1655), whose views were put into English in *Man before Adam* (London, 1656).[4] The advocates of the theory from that day to this are enumerated in Alexander Winchell's *Preadamites* (Chicago, 1880), and this book is the best known contribution to the subject by an American author. It is his opinion that the aboriginal American, with the Mongoloids in general, comes from some descendant of Adam earlier than Noah, and that the black races come from a stock earlier than Adam, whom Cain found when he went out of his native country.[5]

The investigations of the great antiquity of man in America fall far short in extent of those which have been given to his geological remoteness in Europe; and yet, should we believe with Winchell that the American man represents the pre-Adamite, while the European man does not, we might reasonably hope to find in America earlier traces of the geological man, if, as Agassiz shows, the greater age of the American continent weighs in the question.[6]

The explicit proofs, as advanced by different geologists, to give a great antiquity to the American man, and perhaps in some ways greater than to the European man,[7] may now be briefly considered in detail.

Oldest of all may perhaps be placed the gold-drift of California, with its human remains, and chief among them the Calaveras skull, which is claimed to be of the Pliocene (tertiary) age; but it must be remembered that Powell and the government geologists call it quaternary. It was in February, 1866, that in a mining shaft in Calaveras County, California, a hundred and thirty feet below the surface, a skull was found imbedded in gravel, which under the name of the Calaveras skull has excited much interest. It was not the first time that human remains had been found in these California gravels, but it was the first discovery that attracted notice. It was not seen *in situ* by a professional geologist, and a few weeks elapsed before Professor Josiah Dwight Whitney, then state geologist of California, visited the spot, and satisfied himself that the geological conditions were such as to make it certain that the skull and the deposition of the gravel were of the same age. The relic subsequently passed into the possession of Professor Whitney, and the annexed cut is reproduced from the careful drawing made of it for the *Memoirs of the Museum of Comp. Zoölogy* (Harvard University), vol. vi. He had published earlier an account in the *Revue d'Anthropologie* (1872), p. 760.[1] This interesting relic is now in Cambridge, coated with thin wax for preservation, but this coating interferes with any satisfactory photograph. The volume of *Memoirs* above named is made up of Whitney's *Auriferous Gravels of the Sierra Nevada of California* (1880), and at p. ix he says: "There will undoubtedly be much hesitancy on the part of anthropologists and others in accepting the results regarding the Tertiary Age of man, to which our investigations seem so clearly to point." He says that those who reject the evidence of the Calaveras skull because it was not seen *in situ* by a scientific observer forget the evidence of the fossil itself; and he adds that since 1866 the other evidence for tertiary man has so accumulated that "it would not be materially weakened by dropping that furnished by the Calaveras skull itself."

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[1] London, 1863, 3 eds., each enlarged; Philad., 1863. In his final edition Lyell acknowledges his obligations to Lubbock's *Prehistoric Man* and John Evans's *Anc. Stone Implements.* His final edition is called: *The geological evidences of the antiquity of man, with an outline of glacial and post-tertiary geology and remarks on the origin of species with special reference to man's first appearance on the earth.* 4th ed., revised (London, 1873).

[2] *Recent Origin of Man*, p. 10.

[3] Another way of looking at it gives reasons for this omission: "The first chapter of Genesis is not a geological treatise. It is absolutely valueless in geological discussion, and has no value whatever save as representing what the Jews borrowed from the Babylonians, and as preserving for us an early cosmology" (Howorth's *Mammoth and the Flood*, Lond., 1887, p. ix). Between Lyell and Gabriel de Mortillet (*La préhistorique Antiquité de l'Homme*, Paris, 1883) on the one hand and Southall on the other, there are the more cautious geologists, like Prestwich, who claim that we must wait before we can think of measuring by years the interval from the earliest men. (Cf. "Theoretical considerations on the drift containing implements," in *Roy. Soc. Philos. Trans.*, 1862.)

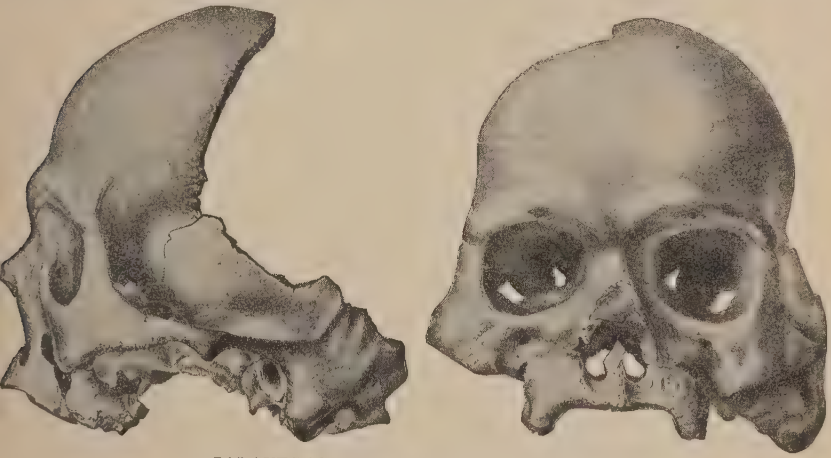
[4] Cf. *Amer. Antiq. Soc. Proc.*, Apr., 1873, p. 33.

[5] Winchell's book is an enlargement of an article contributed by him to M'Clintock and Strong's *Cyclopædia of Biblical Literature*, etc. (vol. viii., 1879), — the editors of which, by their foot-notes, showed themselves uneasy under some of his inferences and conclusions, which do not agree with their conservative views.

[6] Louis Agassiz advanced (1863) this view of the first emergence of land in America, in the *Atlantic Monthly*, xi. 373; also in *Geol. Sketches*, p. 1, — marking the Laurentian hills along the Canadian borders of the United States as the primal continent. Cf. Nott and Gliddon's *Types of Mankind*, ch. 9. Mortillet holds that so late as the early quaternary period Europe was connected with America by a region now represented by the Faröes, Iceland, and Greenland. Some general references on the antiquity of man in America follow: — Wilson, *Prehistoric Man.* Short's *No. Amer. of Antiq.*, ch. 2. Nadaillac, *Les Premiers Hommes*, ii. ch. 8. Foster, *Prehistoric Races of the U. S.*, and *Chicago Acad. of Sciences*, *Proc.*, i. (1869). Joly, *Man before Metals*, ch. 7. Emil Schmidt, *Die ältesten Spuren des Menschen in Nord Amerika* (Hamburg, 1887). A. R. Wallace in *Nineteenth Century* (Nov., 1887, or *Living Age*, clxxv. 472). *Pop. Science Monthly*, Mar., 1877. An epitome in *Science*, Apr. 3, 1885, of a paper by Dr. Kollmann in the *Zeitschrift für Ethnologie.* F. Larkin, *Ancient Man in America* (N. Y., 1880). The biblical record restrains Southall in all his estimates of the antiquity of man in America, as shown in his *Recent Origin of Man*, ch. 36, and *Epoch of the Mammoth*, ch. 25.

[7] Hugh Falconer (*Palæontological Memoirs*, ii. 579) says: "The earliest date to which man has as yet been traced back in Europe is probably but as yesterday in comparison with the epoch at which he made his appearance in more favored regions."

What Whitney says of the history and authenticity of the skull will be found in his paper on "Human remains and works of art of the gravel series," in *Ibid.* pp. 258–288. His conclusions are that it shows the existence of man with an extinct fauna and flora, and under geographical and physical conditions differing from the present, — in the Pliocene age certainly. This opinion has obtained the support of Marsh and Le Conte and other eminent geologists. Schmidt (*Archiv für Anthropologie*) thinks it signifies a pre-glacial man. Winchell (*Preadamites*, 428) says it is the best authenticated evidence of Pliocene man yet adduced.



CALAVERAS SKULL. (*Front and side view.*)

On the contrary, there are some confident doubters. Dawkins (*No. Am. Rev.*, Oct., 1883) thinks that all but a few American geologists have given up the Pliocene man, and that the chances of later interments, of accidents, of ancient mines, and the presence of skulls of mustang ponies (introduced by the Spaniards) found n the same gravels, throw insuperable doubts. "Neither in the new world nor the old world," he says, "is there any trace of Pliocene man revealed by modern discovery." Southall and all the Bible advocates of course deny the bearing of all such evidence. Dawson (*Fossil Men*, 345) thinks the arguments of Whitney nconclusive. Nadaillac (*L'Amérique préhistorique*, 40, with a cut, and his *Les Premiers Hommes*, ii. 435) hesitates to accept the evidence, and enumerates the doubters.[2]

Footprints have been found in a tufa bed, resting on yellow sand, in the neighborhood of an extinct volcano, Tizcapa, in Nicaragua. One of the prints is shown in the annexed cut, after a representation given by Dr. Brinton in the *Amer. Philosoph. Soc. Proc.* (xxiv. 1887, p. 437). Above this tufa bed were fourteen distinct strata of deposits before the surface soil was reached. Geologists have placed this yellow sand, bearing shells, from the post-Pliocene to the Eocene. The seventh stratum, going downwards, had remains of the mastodon.[3]

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[1] Cf. also Putnam's *Report* in Wheeler's Survey, 1879, p. 11.

[2] Cf. H. H. Bancroft, iv. 703; Short, 125, etc.

[3] Dr. Brinton concludes that since the region is one of a rapid deposition of strata, the tracks may not be older than quaternary. The track here figured was 9½ inches long; some were 10 inches. The maximum stride was 18 inches. Cf. Dr. Earl Flint in *Amer. Antiquarian* (vi. 112), Mar..

Some ancient basket work discovered at Petit Anse Island, in Louisiana, has been figured in the *Chicago Acad. of Sciences, Transactions* (i. part 2). Cf. E. W. Hilgard, in *Smithsonian Contributions*, no. 248.

Foster rather strikingly likens what we know of the history of the human race to the apex of a pyramid, of which we know neither the height nor extent of base. Our efforts to trace man back to his beginning would be like following down the sides of that pyramid till it reaches a firm base, we know not where. Many geologists believe in a great ice-sheet which at one time had settled upon the northern parts of America, and covered it down to a line that extends across Pennsylvania, Ohio, and westerly in a direction of some variableness. There are some, like Sir William Dawson,[1] who reject the evidence that persuades others. Prof. Whitney (*Climatic Changes*, 387) holds that it was a local phenomenon confined in America to the north-eastern parts. The advocates look to Dr. James Geikie[2] as having correlated the proofs of the proposition as well as any, while writers like Howorth[3] trace the resulting phenomena largely to a flood.

How long ago this was, the cautious geologist does not like to say;[4] nor is he quite ready to aver what it

ANCIENT FOOTPRINT FROM NICARAGUA.

1884, and (vii. 156) May, 1885; *Peabody Mus. Repts.*, 1884, p. 356; 1885, p. 414; *Amer. Ant. Soc. Proc.*, 1884, p. 92.

[1] *Story of the Earth and Man.*

[2] *The Great Ice-Age, and its Relations to the Antiquity of Man* (1874).

[3] *Mammoth and the Flood.*

[4] "We cannot fix a date, in the historical sense, for events which happened outside history, and cannot measure the antiquity of man in terms of years." Dawkins in *No. Am. Rev.*, Oct., 1883, p. 338. Tylor (*Early Hist. of Mankind*, 197) says: "Geological evidence, though capable of showing the lapse of vast periods of time, has scarcely admitted of these periods being brought into definite chronological terms." Prestwich (*On the geol. position and age of flint-implement-bearing beds*, London, 1864, — from the *Roy. Soc. Phil. Trans.*) says: "However we extend our present chronology with respect to the first appearance of men, it is at present unsafe and premature to count by hundreds of thousands of years." Southall (*Recent Origin of Man*, ch. 33) epitomizes the extreme views of the advocates of glaciation in the present temperate zone.

all means.[1] Perhaps, as some theorize, this prevailing ice showed the long winter brought about by the precession of the equinoxes, as has long been a favorite belief, with the swing of ten thousand years, more or less, from one extreme to the other.[2]

Others believe that we must look back 200,000 years, as James Croll[3] and Lubbock do, or 800,000 and more, as Lyell did at first, and find the cause in the variable eccentricity of the earth's orbit, which shall account for all the climatic changes since the dawn of what is called the glacial epoch, accompanying the deflection of ocean currents, as Croll supposes, or the variations in the disposition of sea and land, as Lyell imagines.[4] This great ice-sheet, however extensive, began for some reason to retreat, at a period as remote, according as we accept this or the other estimate, as from ten thousand to a hundred thousand years.

That the objects of stone, shaped and polished, which had been observed all over the civilized world, were celestial in origin seems to have been the prevalent opinion,[5] when Mahudel in 1723 and even when Buffon in 1778 ventured to assign to them a human origin.[6]

In the gravels which were deposited by the melting of this more or less extended ice-sheet, parts of the human frame and the work of human hands have been found, and mark the anterior limit of man's residence on the globe, so far as we can confidently trace it.[7] Few geologists have any doubt about the existence of human relics in these American glacial drifts, however widely they may differ about the age of them.[8]

It was in the *American Naturalist* (Mar. and Ap., 1872) that Dr. C. C. Abbott made an early communication respecting the discovery of rude human implements in the glacial gravels[1] of the Delaware valley, and since then the Trenton gravels have been the subject of much interest. The rudeness of the flints has repeatedly raised doubts as to their artificial character; but Wilson (*Prehistoric Man*, i. 29) says that it is impossible to find in flints broken for the road, or in any other accumulation of rocky débris, a single specimen that looks like the rudest implement of the drift. Experts attest the exact correspondence of these Trenton tools with those of the European river drift. Abbott has explained the artificial cleavages of stone in the *American Antiquarian* (viii. 43). There are geologists like Shaler who question the artificial character of the Trenton implements. From time to time since this early announcement, Dr. Abbott has made public additional evidence as he has accumulated it, going to show, as he thinks, that we have in these deposits of the glacial action the signs of men contemporary with the glacial flow, and earlier than the red Indian stock of historic times.[2] He summarizes the matter in his "Palæolithic implements of a people on the Atlantic coast anterior to the Indians," in his *Primitive Industry* (1882).[3]

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[1] Cf. Louis Agassiz, *Geological Sketches* (1865), p. 210; 2d series (1886), p. 77.

[2] J. Adhémer, *Revolutions de la Mer*, who advocates this theory, connects with it the movement of the apsides, and thinks that it is the consequent great accumulation of ice at the north pole which by its weight displaces the centre of gravity; and as the action is transferred from one pole to the other, the periodic oscillation of that centre of gravity is thus caused. The theory no doubt borrows something of its force with some minds from the great law of mutability in nature. That it is a grand field for such theorizers as Lorenzo Burge, his *Preglacial Man and the Aryan Race* shows; but authorities like Lyell and Sir John Herschel find no sufficient reason in it for the great ice-sheet which they contend for. Cf. H. Le Hon's *Influence des lois cosmiques sur la climatologie et la géologie* (Bruxelles, 1868). W. B. Galloway's *Science and Geology in relation to the Universal Deluge* (Lond., 1888) points out what he thinks the necessary effects of such changes of axis. J. D. Whitney (*Climatic changes of later geological times*, *Mem. Mus. Comp. Zoöl.*, vii. 392, 394) disbelieves all these views, and contends that the most eminent astronomers and climatologists are opposed to them.

[3] Of the manifold reasons which have been assigned for these great climatic changes (Lubbock, *Prehistoric Times*, 391, and Croll, *Discussions*, enumerates the principal reasons) there is at least some considerable credence given to the one of which James Croll has been the most prominent advocate, and which points to that reduction of the eccentricity of the earth's orbit which in 22,000 years will be diminished from the present scale to one sixth of it, or to about half a million miles. This change in the eccentricity induces physical changes, which allow a greater or less volume of tropical water to flow north. In this way the once mild climate of Greenland is accounted for (Wallace's *Island Life*). Croll first advanced his views in the *Philosophical Mag.*, Aug., 1864; but he did not completely formulate his theory till in his *Climate and time in their geological relations, a theory of secular changes of the earth's climate* (N. Y., 1875). It gained the acquiescence of Lyell and others; but a principal objector appeared in the astronomer Simon Newcomb (*Amer. Jl. of Sci. and Arts*, April, 1876; Jan., 1884; *Philosoph. Mag.*, Feb., 1884). Croll answered in *Remarks* (London, 1884), but more fully in a further development of his views in his *Discussions on Climate and Cosmology* (N. Y., 1886). Whitney's *Climatic Changes* argues on entirely different grounds.

[4] *Principles of Geology*, ch. 10–13, where he gives a econdary place to the arguments of Croll.

[5] Emile Cartailhac's *L'Age de pierre dans les souvenirs et superstitions populaires* (Paris, 1877).

[6] Joly, *L'Homme avant les métaux*, or in the English transl., *Man before Metals*, ch. 2. Nadaillac (*Les Premiers Hommes*, i. 127) reproduces Mahudel's cuts.

[7] Foster, *Prehistoric Races*, 50, notes some obscure facts which might indicate that man lived back of the glacial times, in the Miocene tertiary period. These are the discoveries associated with the names of Desnoyers and the Abbé Bourgeois, and familiar enough to geologists. They have found little credence. Cf. Lubbock's *Prehistoric Times*, 410, and his *Scientific Lectures*, 140; Büchner's *Man*, p. 31; Nadaillac's *Les Premiers Hommes*, ii. 425; and *L'Homme tertiaire* (Paris, 1885); Peschel's *Races of Men*, p. 34; Edward Clodd in *Modern Review*, July, 1880; Dawkins' *Address*, Salford, 1877, p. 9; Joly, *Man before Metals*, 177. Quatrefages (*Human Species*, N. Y., 1879, p. 150) assents to their authenticity. Many of these look to the later tertiary (Pliocene) as the beginning of the human epoch; but Dawkins (*No. Am. Rev.*, cxxxvii. 338; cf. his *Early Man in Britain*, p. 90), as well as Huxley, say that all real knowledge of man goes not back of the quaternary. Cf. further, Quatrefages, *Introd. à l'étude des races humaines* (Paris, 1887), p. 91; and his *Nat. Hist. Man* (N. Y., 1874), p. 44.

Winchell (McClintock and Strong's *Cyclopædia*, viii. 491–2, and in his *Preadamites*) concisely classes the evidences of tertiary man as "Preglacial remains erroneously supposed human," and "Human remains erroneously supposed preglacial;" but he confines these conclusions to Europe only, allowing that the American non-Caucasian man might, perhaps, be carried back (p. 492) into the tertiary age.

Cf. on the tertiary (Pliocene) man, E. S. Morse in *Amer. Naturalist*, xviii. 1001,—an address at the Philad. meeting, Am. Asso. Adv. Science and his earlier paper in the *No. Amer. Rev.*; C. C. Abbott in *Kansas City Rev.*, iii. 413 (also see iv. 84, 326); *Cornhill Mag.*, li. 254 (also in *Pop. Sci. Monthly*, xxvii. 103, and *Eclectic Mag.*, civ. 601). Dr. Morton believed that the Eocene man, of the oldest tertiary group, would yet be discovered. Agassiz, in 1865 (*Geol. Sketches*, 200), thought the younger naturalists would live to see sufficient proofs of the tertiary man adduced. S. R. Pattison (*Age of Man geologically considered* in *Present Day Tract, no. 13*, or *Journal of Christ. Philos.* July, 1883) does not believe in the tertiary man, instancing, among other conclusions, that no trace of cereals is found in the tertiary strata, and that these strata show other conditions unfavorable to human life. His conclusions are that man has existed only about 8,000 years, and that it is impossible for geological science at present to confute or disprove it. In his view man appeared in the first stage of the quaternary period, was displaced by floods in the second, and for the third lived and worked on the present surface.

[8] Lyell's *Antiquity of Man*, 4th ed., ch. 18. Daniel

Some discoveries of human bones in the loess or loam of the Mississippi Valley have not been generally accepted. Lyell (*Second Visit*, ii. 197; *Antiq. of Man*, 203) suspends judgment, as does Joseph Leidy in his *Extinct Mammalia of North America* (p. 365).

The existence of man in western Europe with extinct animals is a belief that, from the incredulity which accompanied the discovery by Kemp in London, in 1714, of a stone hatchet lying in contiguity to some elephant's teeth,[4] has long passed into indisputable fact, settled by the exploration of cave and shell heaps.[5] In North America, this conjunction of man's remains with those of the mastodon is very widely spread.[6] The

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Wilson, on "The supposed evidence of the existence of interglacial man," in the *Canadian Journal*, Oct., 1877. Nadaillac's *L'Amérique préhistorique*, ch. 1; *Les Premiers Hommes*, ii. ch. 10; and his *De la période glaciaire et de l'existence de l'homme durant cette période en Amérique* (Paris, 1884), extracted from *Matériaux*, etc. G. F. Wright on "Man and the glacial period in America," in *Mag. West. Hist.* (Feb., 1885), i. 293 (with maps), and his "Preglacial man in Ohio," in the *Ohio Archæol. and Hist. Quart.* (Dec., 1887), i. 251. Miss Babbitt's "Vestiges of glacial man in Minnesota," in the *Amer. Naturalist*, June, July, 1884, and *Amer. Asso. Adv. Sci. Proc.* xxxii. 385.

[1] Howorth, *Mammoth and the Flood*, 323, considers them flood-gravels instead, in supporting his thesis.

[2] *Pop. Science Monthly*, xxii. 315. *Smithsonian Rept.*, 1874–75. Reports of progress, etc., in the *Peabody Museum Reports*, nos. x. and xi. (1878, 1879). Prof. N. S. Shaler accompanies the first of these with some comments, in which he says: "If these remains are really those of man, they prove the existence of interglacial man on this part of our shore." He is understood latterly to have become convinced of their natural character. J. D. Whitney and Lucien Carr agree as to their artificial character (*Ibid.* xii. 489). Cf. Abbott on Flint Chips (refuse work) in the *Peab. Mus. Rept.*, xii. 506; H. W. Haynes in *Boston Soc. Nat. Hist. Proc.*, Jan., 1881; F. W. Putnam in *Peab. Mus. Rept.*, no. xiv. p. 23; Henry Carvell Lewis on *The Trenton gravel and its relation to the antiquity of man* (Philad., 1880); also in the *Proceedings of the Academy of Natural Sciences of Philadelphia* (1877–1879, pp. 60–73; and 1880, p. 306). Abbott has also registered the discovery of a molar tooth (*Peabody Mus. Rept.*, xvi. 177), and the under jaw of a man (*Ibid.* xviii. 408, and *Matériaux*, etc., xviii. 334.) On recent discoveries of human skulls in the Trenton gravels, see *Peab. Mus. Rept.* xxii. 35. The subject of the Trenton-gravels man, and of his existence in the like gravels in Ohio and Minnesota, was discussed at a meeting of the Boston Soc. of Nat. Hist., of which there is a report in their *Proceedings*, vol. xxiii. These papers have been published separately: *Palæolithic man in eastern and central North America* (Cambridge, 1888). CONTENTS: — Putnam, F. W. Comparison of palæolithic implements. — Abbott, C. C. The antiquity of man in the valley of the Delaware. — Wright, G. F. The age of the Ohio gravel-beds. — Upham, Warren. The recession of the ice-sheet in Minnesota in its relation to the gravel deposits overlying the quartz implements found by Miss Babbitt at Little Falls, Minn. — Discussion and concluding remarks, by H. W. Haynes, E. S. Morse, F. W. Putnam. Cf. also *Amer. Antiquarian*, Jan., 1888, p. 46; Th. Belt's *Discovery of stone implements in the glacial drift of No. America* (Lond., 1878, and *Q. Jour. Sci.* xv. 63; Dawkins in *No. Am. Rev.*, Oct., 1883, p. 347.

[3] Cf. also *Peabody Mus. Repts.*, xix. 492; *Science*, vii. 41; *Boston Soc. Nat. Hist. Proc.*, xxi. 124; *Matériaux*, etc. xviii. 334; *Philad. Acad. Nat. Sciences, Proc.* (1880, p. 306). Abbott refers to the contributions of Henry C. Lewis of the second Geol. Survey of Penna. (*Proc. Philad. Acad. Nat. Sciences*, and "The antiquity and origin of the Trenton gravels," in Abbott's book), and of George H. Cook in the *Annual Reports* of the New Jersey state geologist. Abbott has recently summarized his views on the "Evidences of the Antiquity of Man in Eastern North America," in the *Am. Asso. Adv. Sci. Proc.*, xxxvii., and separately (Salem, 1888).

[4] Figuier, *Homme Primitif*, introd.

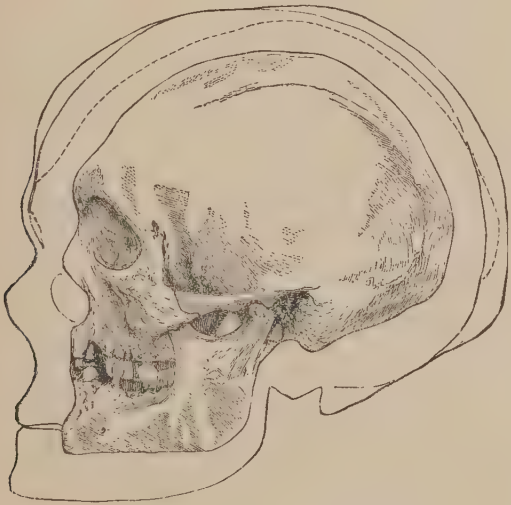
[5] The references are very numerous; but it is enough to refer to the general geological treatises: Vogt's *Lectures on Man*, nos. 9, 10; Nadaillac's *Les Prem. Hommes*, ii. 7; Dawkins in *Intellectual Observer*, xii. 403; and Ed. Lartet, *Nouvelles recherches sur la coexistence de l'homme et des grands mammifères fossiles, réputés caractéristiques de la dernière période geologique*, in the *Annales des Sciences Naturelles*, 4e série, xv. 256. Buffon first formulated the belief in extinct animals from some mastodon bones and teeth sent to him from the Big Bone Lick in Kentucky, about 1740, and Cuvier first applied the name mastodon, though from the animal's resemblance to the Siberian mammoth it has sometimes been called by the latter name. There are in reality the fossil remains of both mastodon and mammoth found in America. On the bones from the Big Bone Lick see Thomson's *Bibliog. Ohio*, no. 44.

[6] Wilson's *Prehist. Man*, i. ch. 2; *Proc. Amer. Acad. Nat. Sciences*, July, 1859; *Amer. Journal of Sci. and Arts*, xxxvi. 199; cix. 335; *Pop. Sci. Rev.*, xiv. 278; A. H. Worthen's *Geol. Survey, Illinois* (1866), i. 38; Haven in *Smithsonian Contrib.*, viii. 142; H. H. Howorth's *Mammoth and the Flood* (Lond., 1887), p. 319; J. P. MacLean's *Mastodon, Mammoth and Man* (Cincinnati, 1880). Cf. references under "Mammoth" and "Mastodon," in *Poole's Index*. Koch represented that he found the remains of a mastodon in Missouri, with the proofs about the relics that the animal had been slain by stone javelins and arrows (*St. Louis Acad. of Sci. Trans.*, i. 62, 1857). The details have hardly been accepted on Koch's word, since some doubtful traits of his character have been made known (Short, *No. Amer. of Antiq.*, 116; Na-

geological evidence is quite sufficient without resorting to what has been called an Elephant's head in the architecture of Palenqué, the so-called Elephant Mound in Wisconsin, and the dubious if not fraudulent Elephant Pipe of Iowa.[1] The positions of the skeletons have led many to believe that the interval since the mastodon ceased to roam in the Mississippi Valley is not geologically great. Shaler (*Amer. Naturalist*, iv. 162) places it at a few thousand years, and there is enough ground for it perhaps to justify Southall (*Recent Origin, etc.*, 551; *Ep. of the Mammoth*, ch. 8) in claiming that these animals have lived into historic times.

A human skeleton was found sixteen feet below the surface, near New Orleans — (which is only nine feet above the Gulf of Mexico), and under four successive growths of cypress forests. Its antiquity, however, is questioned.[2] The belief in human traces in the calcareous conglomerate of Florida seems to have been based (Haven, p. 87) on a misconception of Count Pourtalès' statement (*Amer. Naturalist*, ii. 434), though it has got credence in many of the leading books on this subject. Col. Whittlesey has reported some not very ancient hearths in the Ohio Valley (*Am. Ass. Arts and Sciences, Proc., Chicago, 1868, Meeting*, vol. xvii. 268).

The testimony of the caves to the early existence of man has never had the importance in America that it has had in Europe.



FROM DAWSON'S FOSSIL MEN.*

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daillac, *L'Amérique préhistorique*, 37). There have been claims also advanced for a stone resembling a hatchet, found with such animals in the modified drift of Jersey Co., Illinois. E. L. Berthoud (*Acad. Nat. Sci., Philad. Proc.* 1872) has reported on human relics found with extinct animals in Wyoming and Colorado. Dr. Holmes (*Ibid.* July, 1859) had described pottery found with the bones of the megatherium. Lyell seems to have hesitated to associate man with the extinct animals in America, when the remains found at Natchez were shown to him in an early visit to America (*Antiquity of Man*, 237). Howorth, *Mammoth and the Flood*, 317, enumerates the later discoveries, some being found under recent conditions (*Ibid.* 278), and so recent that the trunk itself has been observed (p. 299). In the earliest instance of the bones being reported, Dr. Mather, communicating the fact to the *Philosophical Trans. Roy. Soc.* (1714), xxix. 63, says they were found in the Hudson River, and he supposed them the remains of a giant man, while the colored earth about the bones represented his rotted body. Cf. *Mass. Hist. Soc. Coll.*, xii. 263.

[1] See on this a later page.

[2] Lyell's *Antiq. of Man*, 4th ed., 236; Nadaillac's *Les premiers hommes*, ii. 13; Southall's *Recent origin of man*, ch. 30. Vogt (*Lectures on Man*) accepts the evidence.

* The outer outline is that of the skull found in the cave of Cromagnon, in France, belonging, as Dawson says, p. 189, to one of the oldest human inhabitants of western Europe, as shown in Lartet and Christy's *Reliquiae Aquitanicae.* The second outline is that of the Enghis skull; the dotted outline that of the Neanderthal skull. The shaded skull is on a smaller scale, but preserving the true outline, and is one of the Hochelaga Indians (site of Montreal). Cuts of the Enghis and Neanderthal skulls are given in Lubbock's *Prehistoric Times*, pp. 328, 329. Dawkins (*Cave Hunters*, 235) thinks the Enghis skull of doubtful age. On the Neanderthal skull see Quatrefages and Hamy, *Crania Ethnica* (Paris, 1873–75), and Dawkins (p. 240). Huxley gives it a great antiquity, and says it is the most ape-like one he ever saw. Quatrefages, *Hommes fossiles*, etc. (1884), says it is not below some later men. Southall (*Epoch of the Mammoth*, 80) says it has the average capacity of the negro, and double that of the gorilla, and doubts its antiquity.

It was in 1822 that Dr. Buckland, in his *Reliquiae diluvianae* (2d ed., 1824), first made something like a systematic gathering of the evidence of animal remains, as shown by cave explorations; but he was not prepared to believe that man's remains were as old as the beasts. He later came to believe in the prehistoric man. In 1833–34, Dr. Schmerling found in the cave of Enghis, near Liége, a highly developed skull, and published his *Recherches sur les ossemens fossiles découverts dans les cavernes de la province de Liége.*[1]

In 1841, Boucher de Perthes began his discoveries in the valley of the Somme,[2] and finally discovered among the animal remains some flint implements, and formulated his views of the great antiquity of man in his *Antiquités Celtiques* (1847), rather for the derision than for the delectation of his brother geologists. In 1848, the Société Ethnographique de Paris ceased its sessions; but Boucher de Perthes had aroused a new feeling, and while his efforts were still in doubt his disciples[3] gathered, and amid much ridicule founded the Société d'Anthropologie de Paris, which has had so numerous a following in allied associations in Europe and America.

He tells us of the struggles he endured to secure the recognition of his views in his *De l'homme antédiluvien et de ses œuvres* (Paris, 1860), and his trials were not over when, in 1863, he found at Moulin Quignon a human jaw-bone,[4] which, as he felt, added much strength to the belief in the man of the glacial gravels.[5]

The existence of man in the somewhat later period of the caves[6] was also claiming constant recognition, and the new society was broad enough to cover all. In 1857, Dr. Fuhlrott had discovered the Neanderthal skull in a cave near Düsseldorf.

In 1858, the discovery of flint tools in the Brixham cave, in Devonshire, was more effective in turning the scientific mind to the proofs than earlier discoveries of much the same character by McEnery had been. In March, 1872, Emile Rivière investigated the Mentone caves, and found a large skeleton, unmistakably human, and the oldest yet found, supposed to be of the palæolithic period. (Cf. *Découverte d'un Squelette humain de l'Epoque paléolithique*, Paris, 1873.) All this evidence is best set forth in the collection of his periodical studies on the mammals of the Pleistocene, which were collected by William Boyd Dawkins in his *Cave Hunting: researches on the evidence of caves, respecting the early inhabitants of Europe* (London, 1874),[7] a book which may be considered a sort of complement to Lyell's *Antiquity of Man* and Lubbock's *Prehistoric Man;* Dawkins (ch. 9, and *Address*, Salford, 1877, p. 3) and Lubbock (*Scientific Lectures*, 150) unite in holding the modern Eskimos to be the representative of this cave folk. No argument is quite sufficient to convince Southall that the archæologists do not place the denizens of the caves too far back (*Recent Origin of Man* ch. 13), and he rejects a belief in the steady slowness of the formation of stalagmites (*Epoch of the Mammoth*, 90), upon which Evans, Geikie, Wallace, Lyell, and others rest much of their belief in the great antiquity of the remains found beneath the cave deposits.[8]

The largest development of cave testimony in America has been made by Dr. Lund,[9] a Danish naturalist, who examined several hundred Brazilian caves, finding in them the bones of man in connection with those of extinct animals.[10] The remains of a race, held to be Indians, found in the caves of Coahuila (Mexico) are described by Cordelia A. Studley in the *Peabody Mus. Reports*, xv. 233. Edward D. Cope has studied the contents of a bone cave in the island of Anguilla (West Indies), in the *Smithsonian Contributions to Knowledge*, no. 489 (1883). J. D. Whitney describes a cave in Calaveras County, in the *Smithsonian Rept.* (1887), and Edward Palmer one in Utah (*Peab. Mus. Rept.*, xi. 269). Putnam explored some in Kentucky (*Ibid.* viii.) Putnam's first account of his cave work in Kentucky, showing the use of them as habitations and as receptacles for mummies, is in the *Proc. Boston Soc. Nat. Hist.*, xvii. 319. J. P. Goodnow made similar explorations in Arizona (*Kansas City Rev.*, viii. 647); E. T. Elliott in Colorado (*Pop. Sci. Mo.*, Oct., 1879), and Leidy in the Hartman cave, in Pennsylvania (*Philad. Acad. Nat. Sci. Proc.*, 1880, p. 348). Cf. also Haldeman in the *Am. Philos. Soc. Trans.* (1880) xv. 351. Col. Charles Whittlesey has discussed the "Evidences of the antiquity of man in the United States," in describing some cave remains of doubtful age.[1] W. H. Dall's *On the remains of later prehistoric man obtained from caves in the Catherine archipelago, Alaska territory, and especially from the caves of the Aleutian islands* (Washington, 1878) is included in the *Smithsonian contributions to knowledge*, xxii.

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[1] Cf. Lyell's *Antiq. of Man*, ch. 5; Huxley's *Man's place in nature*; Le Hon's *L'Homme fossile en Europe;* Leslie's *Origin and destiny of man*, p. 54, who passes in review these early tentative explorations.

[2] Cf. Lyell's description in his *Antiquity of Man*, ch. 8; Quatrefages, *Nat. Hist. Man* (N. Y., 1875), p. 41; Langel, *L'homme antédiluvien;* Büchner's *Man*, Eng. transl., ch. 1; Carl Vogt, *Vorlesungen über den Menschen.*

[3] Rigollot, of Amiens, who had doubted, finally came to believe in De Perthes's views.

[4] Büchner's *Man*, p. 26; Hugh Falconer's *Palæontological Memoirs*, London, 1868 (ii. 601). Falconer's essay on "Primæval Man and his Contemporaries," included in this work, was written in 1863, in vindication of the views which Falconer shared with Boucher de Perthes and Prestwich, and it is an interesting study of the development of the interest in the caves.

[5] Lyell, *Antiq. of Man*, ch. 8; Lubbock, *Prehistoric Times*, ch. 11; Nadaillac, *Les Premiers Hommes*, ii. 122; Leslie, *Origin, etc. of Man*, 56. Southall gives the antagonistic views in his *Recent Origin of Man*, ch. 16, and *Epoch of the Mammoth*, 126.

[6] This is in dispute, however. That the older cave implements and those of the drift may be of equivalent age seems to be agreed upon by some.

[7] Cf. also Geikie's *Great Ice Age;* Lubbock's *Prehistoric Times*, ch. 10; Evans's *Anc. Stone Implements of Gt. Britain;* Wilson's *Prehistoric Annals of Scotland;* Nilsson's *Stone Age in Scandinavia;* Figuier's *World before the Deluge* (N. Y., 1872), p. 473; Joly, *Man before Metals*, ch. 3; Cazalis de Fondouce's *Les temps préhistoriques dans le sud-est de la France;* Roujow's *Etude sur les races humaines de la France;* Peschel's *Races of Men*, introd.

The scarcity of human remains in the drift and in the caves is accounted for by Lyell (*Student's Elements*, N. Y., p. 153) by man's wariness against floods as compared with that of beasts; and by Lubbock (*Prehist. Times*, 349) through the vastly greater numbers of the animals in a hunters' age.

[8] The present day is not without a cave people. See *London Anthropolog. Rev.*, April, 1869, and Büchner's *Man*, Eng. transl., p. 270.

[9] Haven, p. 86.

[10] Cf. Florentino Amegluno's *La Antigüedad del Hombre en la Plata* (Paris, 1880), and Howorth's *Mammoth and the Flood*, 355, who cites Klee's *Le Déluge*, p. 326, and enumerates other evidences of pleistocene man in South America, in connection with extinct animals.

Throughout the world, naturalists have found on streams and on the sea-coast, heaps of the refuse of the daily life of primitive peoples. Beneath the loam which has covered them there are found the shells of edible mollusks and other relics of food, implements, ornaments and vessels, of stone, clay, and bone. Sometimes it happens that natural superposed accumulations will mark them off in layers, and distinguish the usages of successive periods.[2]

OSCAR PESCHEL.*

In the Old World such heaps upon the Danish coast have attracted the most attention under the name of Kjœkkenmœddinger, or Kitchen-middens, and their teachings have enlivened the recitals of nearly all the European archæologists who have sought to picture the condition of these early races.

It seems to be the general opinion that in the Old World this shell-heap folk succeeded, if they do not in part constitute the contemporaries of, the men of the caves.[3]

These accumulations are known usually in America as shell heaps, and it is generally characteristic of them that, while they contain pottery and bone implements, the stone instruments are far less numerous, and generally occur in the upper layers in those of Florida, but they are scattered through all the layers in those of New England. Professor Jeffries Wyman, whose name is in this country particularly associated with shell-heap investigations, could not find[1] that any one had in the scientific spirit called attention to the subject in America earlier than Caleb Atwater in the *Archæologia Americana* (vol. i., 1820), who had observed such deposits on the Muskingum River in Ohio. They had not passed unnoticed, however, by some of the early explorers. Putnam (*Essex Inst. Bulletin*, xv. 86) notes that J. T. Ducatel observed those on the Chesapeake in 1834. The earliest more particular mention of the inland mounds seem to have been made in Prinz Maximilian's *Travels in the United States.*[2] Foster, in his *Prehistoric Races of the U. S.* (ch. 4, — a special survey of the American heaps), says that Professor Vanuxem was the first to describe the sea-side mounds in 1841, in the *Proc. Amer. Asso. Geologists* (i. 22).[3]

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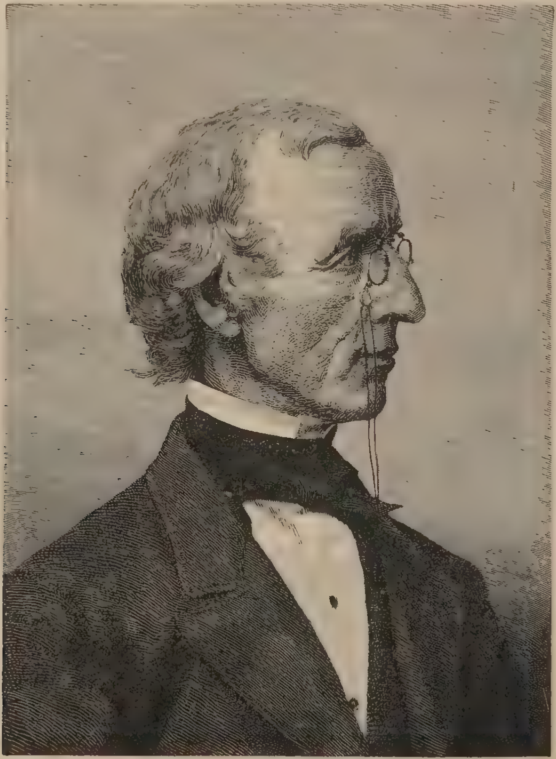
[1] The instances are not rare of mummies being found in caves of the Mississippi Valley; but there is no evidence adduced of any great age attaching to them. Cf. N. S. Shaler on the antiquity of the caverns and cavern life of the Ohio Valley, in *Boston Soc. Nat. Hist. Mem.*, ii. 355 (1875); and on desiccated remains, see the *Archæologia Amer.*, i. 359; Brinton's *Floridian Peninsula*, App. ii. On the American caves see Nadaillac's *L'Amérique préhistorique*, ch. 2.

[2] Abbott's *Primitive Industry*, ch. 30.

[3] Lyell, *Antiq. of Man*, 4th ed. ch. 2; Lubbock, *Prehist. Times*, ch. 7; Nadaillac, *Les premiers hommes*, i. ch. 5; Joly, *Man before Metals*, ch. 4; Figuier, *World before Deluge* (N. Y., 1872), p. 477. Worsaae, the leading Danish authority, calls them palæolithic relics; Lubbock places them as early neolithic. Southall, of course, thinks they indicate the rudeness of the people, not their antiquity. (*Recent Origin*, etc., ch. 12; *Epoch of the Mammoth*, ch. 5.)

* From the engraving in the 1877 ed. of his *Gesch. des Zeitalters der Entdeckungen.* His *Abhandlungen zur Erd- und Völker-Kunde*, continuing his contributions to *Das Ausland* and other periodicals, and edited by J. Löwenberg, was published at Leipzig, in 3 vols. in 1877–79, the preface containing an account of Peschel's services in this field.



JEFFRIES WYMAN.*

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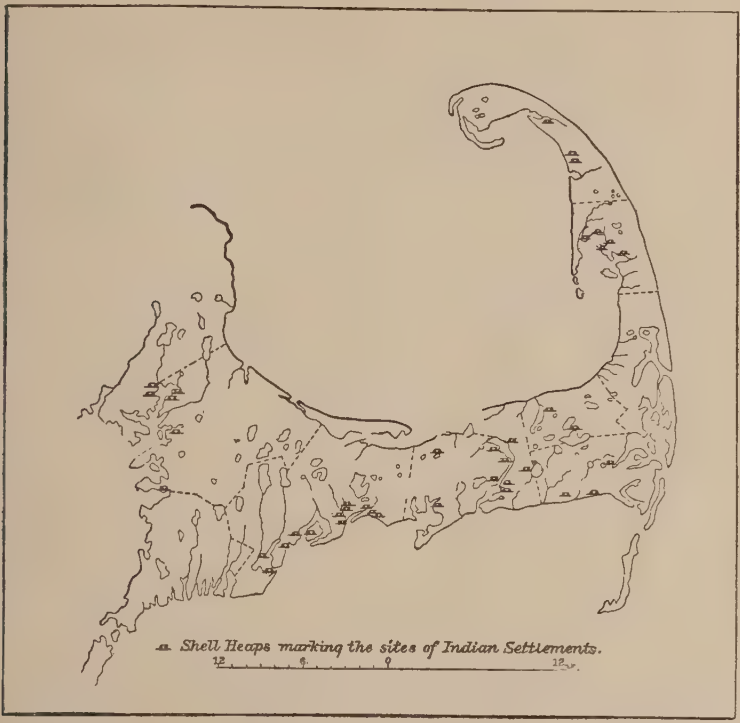
[1] *Am. Naturalist*, ii. 397.

[2] Cf. Lyell's *Second Visit.*

[3] All the general treatises on American archæology now cover the subject: Wilson, *Prehist. Man*, i. 132; Nadaillac, *L'Amérique préhistorique*, ch. 2; Short, *No. Amer. Antiq.*, 106; *Smithsonian Reports*, 1864 (Rau), 1866, 1870 (J. Fowler); *Bull. Essex Inst.*, iv. (Putnam); *Peabody Mus. Reports*, i., v., vii.; *Amer. Assoc. Adv. Sci. Proc.* 1867, 1875; *Phil. Acad. Nat. Sci. Proc.* 1866; *Pop. Science Monthly*, x. (Lewis); Lyell's *Second Visit*, i. 252; Stevens, *Flint Chips*, 194. For local observations: J. M. Jones in *Smithsonian Ann. Report*, 1863, on those of Nova Scotia. S. F. Baird in *Nat. Museum Proc.* (1881, 1882), on those of New Brunswick and New England. For those in Maine see *Peabody Mus. Reports*, xvi., xviii.; *Central Ohio Sci. Assoc. Proc.*, i. 70; that at Damariscotta, in particular, is described in the *Peabody Mus. Reports*, xx. 531, 546; and in the *Maine Hist. Soc. Col.*, v. (by P. A. Chadbourne) and vi. 349. Wyman's studies are in the *Amer. Naturalist*, Jan., 1868, and *Peabody Mus. Rept.*, ii. Putnam (*Essex*

* From a photograph taken in 1868, furnished by his family. The portrait in the *Peabody Museum Report*, no. viii., represents him somewhat later in life, with a beard. He died Sept. 4, 1874. There are accounts of Wyman in the same *Report*, by Asa Gray, who also made an address on Wyman before the Boston Society of Nat. Hist. (cf. *Pop. Science Monthly*, Jan., 1875), with commemorations by O. W. Holmes (*Atlantic Monthly*, Nov., 1874, and *Mass. Hist. Soc. Proc.*, xiv. 4), by F. W. Putnam in the *Proc. Amer. Acad.* with a list of his publications; by Packard in the *Mem. Nat. Acad.*, and B. G. Wilder (*Old and New*, Nov., 1874).

There has been as yet little found in America from which to develop the evidence of early man from any lake or river dwellings, while so much has been done in Europe.[1] In some parts of Florida the Indians are



SHELL HEAPS ON CAPE COD.

Inst. Bull., xv. 86) says that those at Pine Grove, near Salem, Mass., were examined in 1840. The map which is annexed of those on Cape Cod, taken from the *Smithsonian Report* (1883, p. 905), shows the frequency of them in a confined area, as observed; but the same region doubtless includes many not observed.

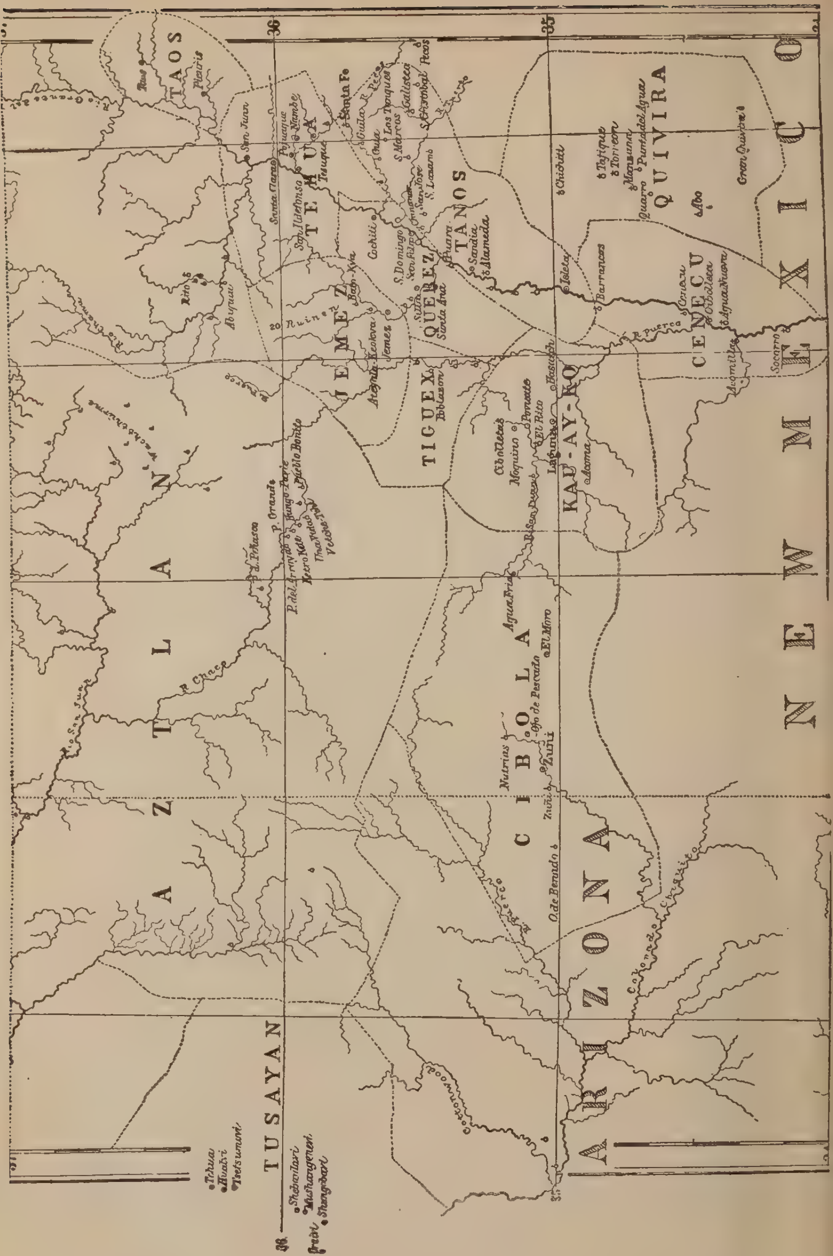
For those on the New Jersey coast see Cook's *Geology of New Jersey* (Newark, 1868), and Rau in the *Smithsonian Reports*, 1863, 1864, 1865. The Lockwood collection from the heap at Keyport is in the Peabody Museum (cf. *Rept.*, xxii. 43). Francis Jordan describes the *Remains of an Aboriginal Encampment at Rehoboth, Delaware* (Philad., 1880). Elmer R. Reynolds reported on "Precolumbian shell heaps at Newburg, Maryland, and the aboriginal shell heaps of the Potomac and Wicomico rivers" at the *Congrès des Américanistes* (Copenhagen, 1883, p. 292). Joseph Leidy describes those at Cape Henlopen in the *Phil. Acad. Nat. Sci.*, 1866. Those on the Georgia coast, St. Simon's Island, etc., are pointed out in C. C. Jones's *Antiquities of the Southern Indians; Smithsonian Repts.*, 1871 (by D. Brown); in Lyell's *Antiq. of Man*, and in his *Second Visit to the U. S.* (N. Y., 1849), i. 252.

The shell heaps of Florida have had unusual attention. Wyman has indicated the absence of objects in them, showing Spanish contact. Dr. Brinton's first studies of them were in his *Notes on the Floridian Peninsula* (Philad., 1859), ch. 6, and again in the *Smithsonian Report* (1866), p. 356. Prof. Wyman's first reports (St. John River) were in *The American Naturalist*, Jan., Oct., Nov., 1868. He also described them in the *Peabody Mus. Report*, i., v., vii., and in his *Fresh Water Shell Heaps of the St. John River, Florida* (Salem, 1875), being no. 4 of the *Memoirs of the Peabody Acad. of Science.* There are other investigations recorded in the *Smithsonian Reports*, 1877, by S. P. Mayberry, on St. John River; 1879, by S. T. Walker, on Tampa Bay; also by A. W. Vogeler in *Amer. Naturalist*, Jan., 1879; by W. H. Dall in the *American Journal of Archæology*, i. 184; and by A. E. Douglass in the *Amer. Antiquarian*, vii. 74, 140. On those of Alabama, see *Peabody Mus. Rept.*, xvi. 186, and *Smithsonian Rept.*, 1877.

On those of the great interior valleys, see the *Second Geological Report of Indiana*, and Humphrey and Abbott's *Physics and Hydraulics of the Mississippi Valley.*

For the California coast, there is testimony in Bancroft's *Native Races*, iv. 709–712; *Smithsonian Rept.*, 1874 (by P. Schumacher); *American Antiquarian*, vii. 159; and *Journal of the Anthropological Institute*, v. 489. Schumacher covers the northwest coast in the *Smithsonian Rept.*, 1873. Those in Oregon are reported to be destitute of the bones of extinct animals, in the *Bull. U. S. Geol. Survey*, iii. Bancroft, *Nat. Races*, iv. 739, refers to those on Vancouver's Island. W. H. Dall describes those on the Aleutian Islands in the *Contributions to No. Amer. Ethnology*, i. 41.

[1] This branch of archæological science began, I believe, with the discovery by Sir Wm. R. Wilde of some lacustrine habitations in a small lake in county Meath. R. Monro's *Ancient Scotch lake Dwellings* (Edinburgh, 1882) has



PUEBLO REGION.*

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* From a map, "Originalkarte der Urwohnsitze der Azteken und Verwandten Pueblos in New Mexico, zusammengestellt von O. Loew," in Petermann's *Mittheilungen über wichtige neue Erforschungen auf dem Gesammtgebiete der Geographie*, xxii. (1876), table xii. The small dotted circles stand for inhabited pueblos; those with a perpendicular line attached are ruins; and when this perpendicular line is crossed it is a Mexicanized pueblo. See the map in Powell's *Second Rept. Bur. Ethnol.* (1880–81) p. 318, which marks the several classes: inhabited, abandoned, ruined pueblos, cavate houses, cliff houses, and tower houses.

reported to have built houses on piles; and in South America tree-houses and those on platforms are well known. Mr. Hilborne T. Cresson has reported (*Peabody Mus. Rept.*, xxii. for 1888) the discovery of pile ends in the Delaware River, and has shown that two of these river stations are earlier than the third, as is evident from the rude implements of argillite found in the two when compared with those discovered in the third, where implements of jasper and quartz and fragments of pottery were associated with those of argillite.

The earliest discoveries of the cliff houses of the Colorado region were made by Lieut. J. H. Simpson, and his descriptions appeared in his *Journal of a Military Reconnoissance*, in 1849.[1] No considerable addition was made to our knowledge of the cliff dwellers till in 1874–75, when special parties of the Hayden Geological Survey were sent to explore them (*Hayden's Report, 1876*), whence we got accounts of those of southwestern Colorado by W. H. Holmes, including the cavate-houses and cliff-dwellers of the San Juan, the Mancos, and the ruins in the McElmo cañon.[2] W. H. Jackson gives a revised account of his 1874 expedition in the *Bulletin* of the Survey (vol. ii. no. 1), adding thereto an account of his explorations of 1875. Jackson also gives a chapter on the ruins of the Chaco cañon.[3]

In coming to the class of ruins lying in a few instances just within, but mostly to the north of, the Mexican line, we encounter the Pueblo race, whose position in the ethnological chart is not quite certain, be their connection with the Nahuas and Aztecs,[4] or with the moundbuilders, — red Indian if they be, — or with the cliff-dwellers, as perhaps is the better opinion. Their connection with savage nations farther north is not wholly determinable, as Morgan allows, on physical and social grounds, and perhaps not as definitely settled by their architecture as Cushing seems to think.[5]

The Spaniard early encountered these ruins,[6] and perhaps the best summary of the growth of our knowledge of them by successive explorations is in Bancroft's *Nat. Races*, iv. ch. 11.[7] In the century after the Spanish conquest, we have one of the best accounts in the *Memorial* of Fray Alonso Benavides, published at Madrid in 1630.[8] The most famous of the ruins of this region, the Casa Grande of the Gila Valley in Arizona,[9] is

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gathered what is known of the remains in Great Britain. There are similar remains in various parts of the continent of Europe; but those revealed by the dry season of 1853–54 in the Swiss lakes have attracted the most notice. Dr. Keller described them in *Reports* made to the Archæological Society of Zurich. A. Morlot printed an abstract of Keller's Report in the *Smithsonian Report*, 1863. In 1866, J. E. Lee arranged Keller's material systematically, and translated it in *The Lake Dwellings of Switzerland and other parts of Europe, by Ferdinand Keller* (London, 1866), which was reissued, enlarged and brought down to date, in a second edition in 1878. The earliest elaborated account was Prof. Troyon's *Habitations lacustres* (1860), of which there was a translation in the *Smithsonian Reports*, 1860, 1861. Troyon and Keller have reached different conclusions: the one believing that the traces of development in the remains indicate new peoples coming in, while Keller holds these to be signs of the progress of the same people. A paper by Edouard Desor, *Palafittes or Lacustrian Constructions*, appeared in English in the *Smithsonian Report*, 1865. There is a large collection of typical relics from these lake dwellings in the Peabody Museum (*Report*, v.).

These evidences now make part of all archæological treatises: Lyell's *Antiq. of Man*; Lubbock, *Prehist. Times*, ch. 6; Nadaillac, *Les premiers hommes*, i. 241; Stevens, *Flint Chips*, 119; Joly, *Man before Metals*, ch. 5; Figuier, *World before the Deluge* (N. Y., 1872), p. 478; Southall, *Recent Origin*, etc., ch. 11, and *Epoch of the Mammoth*, ch. 4; *Archæologia*, xxxviii.; Haven in *Amer. Antiq. Soc. Proc.*, Oct., 1867; Rau in *Harper's Monthly*, Aug., 1875; *Poole's Index*, p. 718, and *Supplement*, p. 246. The man of the Danish peat-beds and of the Swiss lake dwellings is generally held to belong to the present geological conditions, but earlier than written records.

[1] *Senate Doc.*; also separately, Philad., 1852. Cf. Bancroft, *Native Races*, iv. 652; Domenech's *Deserts*, etc., i. 201; *Annual Scient. Discovery*, 1850; Short, *No. Am. of Antiq.*, 293. A photograph of the Casa Blanca is given in *Putnam's Report*, *Wheeler's Survey*, p. 370. Cf. Haven in *Am. Antiq. Soc. Proc.*, 1855, p. 26.

[2] *Bull. U. S. Geol. and Geog. Survey of the territories*, 2d series, no. 1 (Washington, 1875), and its *Annual Rept.* (Washington, 1876), condensed in Bancroft, iv. 650, 718, and by E. A. Barber in *Congrès des Américanistes*, 1877, i. 22. Cf. Short, 295, etc.

[3] *Bulletin*, etc., ii. (1876). Hayden's *Survey* (1876). Cf. Short, p. 305; *Kansas City Rev.*, Dec., 1879 (on their age); James Stevenson in *Fourth Rept. Bureau of Ethnology*, pp. xxxiv, 284; Nadaillac's *Les Premiers Hommes* (ii. 61), and *L'Amérique préhistorique*, ch. 5; *Scribner's Mag.*, Dec., 1878 (xvii. 266); *Good Words*, xx. 486; *Science*, xi. 257. Those of the Cañon de Chelly are described by James Stevenson in the *Journal Amer. Geo. Soc.* (1886), p. 329. It is generally recognized that the cliff dwellers and the Pueblo people were the same race, and that the modern Zuñi and Moquis represent them. Bandelier in *Archæol. Inst. of Am., 5th Rept.* J. Stevenson (*Second Rept. Bur. of Ethnol.*, 431) describes some cavate dwellings of this region cut out of the rock by hand. There is no evidence that these remains call for any association with them of the great antiquity of man.

[4] Cf., for instance, Short, 331.

[5] Morgan (*Systems of Consanguinity*, 257) finds correspondence to the roving Indian in physical and cranial character, in linguistic traits, and in the similarity of arts and social habits. Their connection with the moundbuilder and cliff-dwelling race is traced in H. F. C. Ten Kate's *Reizen en Onderzolkingen in Nord America* (Leyden, 1885). Cushing thinks (*Fourth Rept. Bur. Ethnol.*, 481) they got their habit of building in stories from having, as cliff-dwellers, earlier built on the narrow shelves of the rocks. Morgan (*Peab. Mus. Rept.*, xii. 550) thinks their architectural art deteriorated, since the ruined pueblos are finer constructions than those inhabited now. Cf. on the origin of Pueblo architecture V. Mindeleff in *Science*, ix. 593, and S. D. Peet in *Amer. Antiquarian*, iv. 208, and *Wisconsin Acad. of Science*, v. 290.

[6] See chapter vii. of Vol. II.

[7] Cf. lesser accounts of these earlier notices in E. G. Squier's paper in the *Amer. Rev.*, Nov., 1848; and G. M. Wheeler in the *Journal Amer. Geog. Soc.* (1874), vol. vi.

[8] The book is rare. There is a copy in Harvard College library. Cf. Sabin, ii. 4636–38; Ternaux, 518; Carter-Brown, ii.; Leclerc, no. 813 (200 francs). There is a French version, Brussels, 1631; and a Latin, Saltzburg, 1634.

[9] Not to be confounded with the Casas Grandes, farther

supposed to have been seen (1540) by Coronado, then in a state of ruin; but we get no clear description till that given by Padre Mange, who accompanied Padre Kino to see the ruins in 1697.[1]

There are few descriptions[2] of the antiquities of this country previous to the military examination of it which was made during the Mexican War. Such is recorded in W. H. Emory's *Notes of a Military Reconnoissance from Fort Leavenworth in Missouri to San Diego in California*,[3] which gives us some of the earliest representations of these antiquities, including the ruins of Pecos.[4] In 1849, Col. Washington, the governor of New Mexico, organized an expedition against the Navajos, and Lieut. James H. Simpson gives us the first detailed account of the Chaco cañon in his *Journal of a Military Reconnoissance* (Philad., 1852).[5] He also covered (p. 90), among the other ruins of this region, the old and present habitations of the Zuñi, but these received in some respects more detailed examination in Capt. L. Sitgreave's *Report of an Expedition down the Zuñi and Colorado rivers* (Washington, 1853),[6] accompanied by a map and other illustrations.[7] New channels of information were opened when the United States government undertook to make surveys (1853) for a trans-continental line of railways; and a great deal of material is embodied in Whipple's report on the Indian tribes in the *Pacific R. R. Reports*, vol. iii. The running of the boundary line between the United States and Mexico also contributed to our knowledge. The commissioner during 1850–53 was John Russell Bartlett, who, on the failure of the government promptly to publish his report, printed his *Personal narrative of explorations and incidents* (N. Y., 1854), and made in some parts of it an important contribution to our knowledge of the antiquities of this region.[8]

No considerable advance was now made in this study for about a score of years. Major Powell first published his account of his adventurous exploration (1869) of the Colorado cañon in *Scribner's Monthly* (Jan., Feb., Mar.) in 1875, and it was followed by his official *Exploration of the Colorado River* (Washington, 1875), making known the existence of ruins in the cañon's gloomy depths. The *Reports* of the U. S. Geological Survey, including the accounts by W. H. Jackson and W. H. Holmes, give much valuable and original information; and a good deal of what has been included in the *Reports of the Chief of Engineers* (U. S. Army) for 1875 and 1876 will also be found in the seventh volume, edited by F. W. Putnam, of *Wheeler's Survey*,[9] including the pueblos of Acoma, Taos, San Juan, and the ruin[10] on the Animas River.

The latest examinations of these Pueblo remains, of which we have published accounts, are those made by A. F. Bandelier for the Archæological Institute of America. He has given his results in his "Historical introduction to studies among the sedentary Indians of New Mexico," and in his "Report on the ruins of Pecos," which constitutes the initial volume of *Papers, American series*, of the Institute (Boston, 1881).[11] He believes Pecos to be Cicuye, visited by Alvarado in 1541, — a huge pile with 585 compartments, finally abandoned in 1840. In October, 1880, he examined the region west of Santa Fé (*Second Rept. Archæol. Inst.*). His explorations also determined the eastern limits of the sedentary occupation of New Mexico

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south in the Mexican province of Chihuahua, which is of a similar character. Cf. Bancroft, iv. 604 (with references); Short, ch. 7; Bartlett's *Personal Narrative*, ii. 348. It was first described in Escudero's *Noticias de Chihuahua* (1819); and again in 1842, in *Album Mexicano*, i. 372.

[1] From that day to the present there have been very many descriptions: *Documentos para la historia de Mexico*, 4th ser., i. 282; iv. 804; Bancroft, *Nat. Races*, iv. 621; Short, 279; Schoolcraft, *Ind. Tribes*, iii. 300; Bartlett, *Personal Nar.*, ii. 278, 281; Emory, *Reconnaissance*, 81, 567; Humboldt, *Essai politique*; Baldwin, *Anc. America*, 82; Mayer, *Mexico*, ii. 396, and *Observations*, 15; Domenech, *Deserts*, i. 381; Ross Browne, *Apache Country*, 114; Jametel in *Rev. de Géog.*, Mar., 1881; Nadaillac, *Prehist. Amér.*, 222. Bancroft groups many of the descriptions, and best collates them.

[2] Gregg, in his *Commerce des Prairies* (N. Y., 1844), examined the Pueblo Bonito in 1840.

[3] Washington, 1848, — 30th Cong., Ex. Doc. 41. This includes Lieut. J. W. Abert's *Report and Map of the Examination of New Mexico*. He visited two pueblos. This and other material afforded the base for the studies of Squier and Gallatin, the former printing "The ancient monuments of the aboriginal semi-civilized nations of New Mexico and California" (*Amer. Rev.*, 1848), and the latter a paper in the *Amer. Ethnol. Soc. Trans.*, ii., repeated in French in the *Nouv. Ann. des Voyages*, 1851, iii. 237.

[4] This is perhaps the most important of all the ruins. Bancroft, iv. 671. Bandelier's studies are the most recent. *Congrès des Amér., Compte Rendu*, 1877, ii. 230, and his *Introd. to studies among the sedentary Indians of New Mexico and Report of the ruins of Pecos* (Boston, 1881, — Archæol. Inst. of America).

[5] Also in *Rept. of Sec. of War, 1st Sess. 31st Cong.* Cf. Bancroft, iv. 652, 655, 661; Baldwin's *Anc. America*, 86; Domenech's *Deserts*, i. 149, 379; Short, 292. The Chaco cañon was visited by W. H. Jackson in 1877, and his report is in the *Report of Hayden's Survey*, 1878, p. 411. Morgan gives a summary, with maps (see Nadaillac, 229), in his *Houses and House Life*, etc., ch. 7, 8, — holding (p. 167) them to be the seven cities of Cibola seen by Coronado. Cf. on this mooted question our Vol. II. 501–503; and Simpson's paper in the *Journal Amer. Geog. Soc.* vol. v.

[6] *32d Cong., 2d sess., Sen. Ex. Doc., No. 59.*

[7] On the Zuñi region see Bancroft, iv. 645, 667, 673 (with ref.); Short, 288; Möllhausen, *Reisen in die Felsengebirge Nord Amerikas* (ii. 196, 402), and his *Tagebuch*, 283; Cozzen's *Marvellous Country*; *Tour du Monde*, i.; *Harper's Monthly*, Aug., 1875; J. E. Stevenson's *Zuñi and the Zunians* (Washington, 1881). Of F. H. Cushing's recent labors among the Zuñi, see Powell's *Second*, *Third*, and *Fifth Reports*, *Bur. of Ethnology*.

[8] The *Report* of Lieut. W. H. Emory, directly in charge of the survey (*Ho. Ex. Doc. 135, 34th Cong., 1st sess.*), was printed separately in 3 vols. in 1859.

[9] *Report upon U. S. Geol. Surveys, west of the one hundredth meridian in charge of First Lieut. Geo. M. Wheeler, vol. vii., Archæology* (Washington, 1879). Ernest Ingersoll, a member of the survey, published some papers on the "Village Indians of New Mexico" in the *Journal Amer. Geog. Soc.*, vi. and vii.

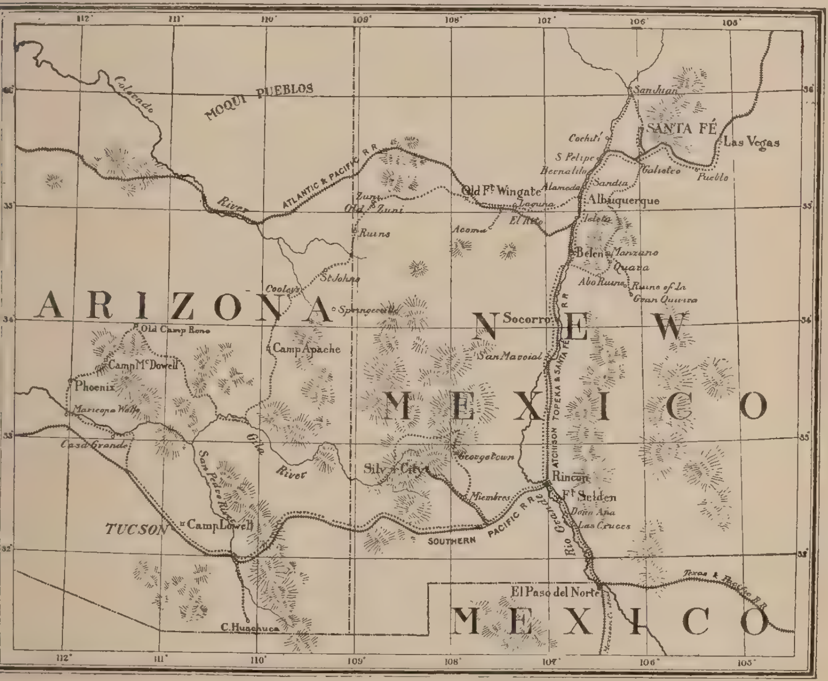
[10] Cf. L. H. Morgan on this ruin in the *Peab. Mus. Rept.*, xii. 536, and in a paper in the *Trans. Amer. Ass. Adv. Sci.* (St. Louis, 1877).

[11] His notes form a good bibliography. He intends as a supplement an account of the different explorations prior to the seventeenth century.

(*Fifth Report*). He renewed his studies in 1882 (*First Bull. Archæol. Inst.*, Jan., 1883), and thought the ruins showed successive occupiers, and divides them into cave dwellings, cliff houses, one-story buildings, and those of more than one, with each higher one retreating from the front of the next lower.

The most essential sources of information have thus been enumerated, but there is not a little fugitive and comprehensive treatment of the subject worth the student's attention who follows a course of investigation.[1]

The literature of the moundbuilders, and of the controversies arising out of the mysterious relics of their life, is commensurate with the very wide extent of territory covered by their traces.[2] It was long before any intelligent notice was taken of the mounds by those who traversed the wilderness. De Soto, in 1540,



THE PUEBLO REGION.*

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[1] Bancroft (*Native Races*, i. 529, 599; iv. 662, etc.) ives the best clues to authorities prior to 1875. Short (ch.) condenses more, and Baldwin (p. 78) still more. Nadail-ic, *L'Amérique préhistorique* (ch. 5) also summarizes. Iorgan studies the social condition of this ancient people *Systems of Consanguinity*, Part ii. ch. 6; *Houses and Iouse Life*, ch. 6; *Peabody Mus. Repts.*, xii.). Cf. James tevenson's "Ancient Habitations of the Southwest" in *ournal Amer. Geog. Soc.*, xviii. (1886), and his illus- ated *Catalogue of Collections* in Powell's *Second Rept. ureau of Ethnol.*; E. A. Barber on "Les anciens pue- os" in *Cong. des Américanistes*, 1877, i. 23, in which he aces a gradation from the moundbuilders through the d pueblo peoples to the Toltecs; C. Schoebel's account of expedition in the *Archives de la Soc. Amér. de France*, ouv. ser. i., and the references in *Poole's Index*, i. 1063; 359.

Dividing the remaining references into localities, we note for New Mexico the following: J. H. Carleton in the *Smithsonian Rept.* (1854); W. B. Lyon (*Ibid.* 1871); J. A. McParlin (*Ibid.* 1877); Turner in *Am. Ethnol. Soc. Trans.*, ii.; and A. W. Bell in *Journal of the Ethnol. Soc.* (London), Oct., 1869. Carleton describes the ruins also in the *Western Journal*, xiv. 185. Clarence Pullen describes the people in *Journal Amer. Geog. Soc.*, xix. 22. For Colorado: E. L. Berthoud in *Smithsonian Repts.*, 1867, 1871. G. L. Cannon in *Ibid.* 1877; H. Gannett in *Pop. Sci. Monthly*, xvi. 666 (Mar., 1880); *Amer. Naturalist*, x. 31; *Lippincott's Mag.*, xxvi. 54. For Arizona: F. E. Grossmann, J. C. Y. Lee, and R. T. Burr in *Smithsonian Repts.*, respectively for 1871, 1872, 1879, with other references in Poole under "Moqui."

[2] This scope of treatment is manifest in the large number of papers contained in the *Smithsonian Reports*. See W. J. Rhees' *Catal. of Publ. of Sm. Inst.* (Washington, 1882), pp. 252–3.

* A reduction of the map accompanying Bandelier's report on his investigations in New Mexico, in the *Fifth Rept. of e Archæological Institute of America* (Cambridge, 1884).

could get no traditions concerning them beyond the assurances that the peoples he encountered had built them, or some of them. We read of them also in Garcilasso de la Vega, Biedma and the Knight of Elvas, on the Spanish side; but on the French at a later day we learn little or nothing from Joutel, Tonti, and Hennepin, though something from Du Pratz, La Harpe and some of the missionaries. Kalm,[1] the Swede, in 1749, was about the first to make any note of them. Carver found them near Lake Pepin in 1768. In 1772 the missionary David Jones[2] made observations upon those in Ohio. Adair did not wholly overlook them in his *American Indians* in 1775. Prof. James Dunbar, of Aberdeen, in his *Essays on the history of mankind in rude and uncultivated ages* (Lond., 1780), uses what little Kalm and Carver afforded. Jefferson in his *Notes on Virginia* (1782) speaks of them as barrows "all over the country," and "obvious repositories of the dead."[3] Arthur Lee makes reference to them in 1784. A map of the Northwest Territory, published by John Fitch about 1785, places in the territory which is now Wisconsin the following legend: "This country has once been settled by a people more expert in the art of war than the present inhabitants. Regular fortifications, and some of these incredibly large, are frequently to be found. Also many graves and towers like pyramids of earth." In 1786 Franklin thought the works at Marietta might have been built by De Soto; and Noah Webster, in a paper in Roberts' *Florida*, assented.[4] B. S. Barton, in his *Observations in some parts of Natural History* (London, 1787), credited the Toltecs with building them, whom he considered the descendants of the Danes.

As the century draws to a close, we find occasional and rather bewildered expression of interest in the *Observations on the Ancient Mounds* by Major Jonathan Heart;[5] in the *Missions* of Loskiel; in the *New Views* of Dr. Smith Barton; in the *Carolina* of William Bartram; and in the travels of Volney. In 1794 Winthrop Sargent reported in the *Amer. Philos. Soc. Trans.*, iv., on the exploration of the mounds at Cincinnati. The present century soon elicited a variety of observations, but there was little of practical exploration. A New England minister, Thaddeus Mason Harris, passed judgment upon those in Ohio, when he journeyed thither in 1803.[6] The commissioner of the United States to run the Florida boundary, Andrew Ellicott, describes some near Natchez in his *Journal* (1803). Bishop Madison communicated through Professor Barton some opinions about those in Western Virginia, which appear in the *Transaction* of the American Philosophical Society, taking different grounds from Dr. Harris, who had thought them works of defence. The explorations of Lewis and Clark (1804–6) up the Missouri, and of Pike (1805–7) up the Mississippi, produced little. Robin, the French naturalist, in 1805,[7] Major Stoddard[8] and Breckenridge[9] later, saw some in Louisiana, Missouri, and Illinois. A leading periodical, *The Portfolio*, contributed something to the common stock in 1810 and 1814, giving plans of some of the mounds. Those in Ohio were again the subject of inquiry by F. Cuming in his *Sketches of a Tour to the Western Country* (Pittsburg, 1810), and by Dr. Daniel Drake in his *Picture of Cincinnati and the Miami Valley* (Cinn., 1815). John Heckewelder, the Moravian missionary, accounted for the ancient fortifications through the traditions of the Delawares, who professed once to have inhabited this country, but it has been suspected that the worthy missionary was imposed upon.[10] DeWitt Clinton, in 1811, before the New York Historical Society, and again in 1817, before the Literary and Philosophical Society of New York, had given some theories in which the Scandinavians figured as builders of the mounds in that State.

It was thus at a time when there was much speculation and not much real experimental knowledge respecting these remains that, under the auspices of the then newly founded American Antiquarian Society, Mr. Caleb Atwater, of Ohio, was employed to explore and survey a considerable number of these works. He embodied his results in the initial volume of the publication of that society, the *Archæologia Americana*.[11] After pointing out scattered evidences of the traces of European peoples, found in coins and other relics throughout the country, Atwater proceeds to his description of the earthworks, mainly of Ohio; and beside giving many plans,[12] he enters into the question of their origin, and expresses a belief in the Asiatic origin of their builders, and in their subsequent migration south to lay, as he thinks, the foundations of the Mexican and Peruvian civilizations.

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[1] *Beschreibung der Reise* (Göttingen, 1764; Eng. transl., Lond., 1772).

[2] *Journal of two visits*, etc., Burlington, 1774 (Thomson's *Bibl. of Ohio*, no. 657).

[3] His account is copied in the *Mass. Mag.*, Oct., 1791.

[4] Cf. *Amer. Mag.*, Dec., 1787; Jan., Feb , 1788.

[5] Repeated in Gilbert Imlay's *Topog. Descrip. West. Territory.*

[6] *Journal of a Tour.*

[7] *Voyage dans Louisiane* (Paris, 1807).

[8] *Sketches of Louisiana* (1812).

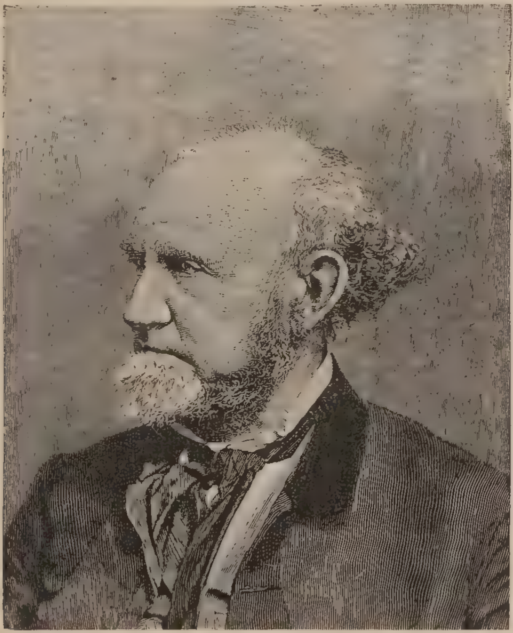
[9] *Views of Louisiana* (Pittsburg, 1814).

[10] *Account of the History, Manners and Customs of the Indian Nations who once inhabited Pennsylvania and the neighboring States*, in the *Transactions Amer. Philos. Soc.* (1819), and later repeated in other editions and versions (P. G. Thomson's *Bibliog. of Ohio*, no. 533, etc., and Pilling's *Eskimo Bibliog.*, 43). Louis Cass's criticism on Heckewelder is in *No. Am. Rev.* Jan., 1826. Cf. Haven, *Archæol. U. S.*, 43.

[11] *Description of the Antiquities discovered in the State of Ohio and other Western States, with engravings from actual surveys* (Worcester, Mass., 1820). This was reprinted in the *Writings of Caleb Atwater* (Columbus, 1833). This volume also included his *Observations made on a tour to Prairie du Chien in 1829* (Columbus, 1831), where Atwater was sent by the Federal government to purchase mineral lands of the Indians (P. G. Thomson's *Bibl. of Ohio*, no. 52; Pilling, *Bibl. of Siouan Lang.*, p. 2). The part originally published in the *Archæol. Amer.* was translated by Malte Brun in *Nouv. Annales de Voyages*, xxviii., who added a paper on "L'origine et l'époque des monumens de l'Ohio." Cf. Haven's *Archæol. U. S.*, 33, and the memoir of Atwater in *Am. Antiq. Soc. Proc.*, Oct., 1867.

[12] Including those of Newark, Perry County, Marietta, Circleville, Paint Creek, Little Miami, Piketon, etc.

During the next twenty-five years there cannot be said to have been much added to a real knowledge of the subject. Yates and Moulton in their *Hist. New York* (1824) borrowed mainly from Kirkland (1788) the missionary. Humboldt had no personal contact with the remains to give his views any value (1825). Warden in his *Recherches* (1827) gave some new plans and rearranged the old descriptions. There was some sober observation in M'Culloh's *Researches* (3d ed., 1829); some far from sober in Rafinesque (1838); some compiled descriptions with worthless comment in Josiah Priest's *American Antiquities* (Albany, 1838); something like scientific deductions in S. G. Morton's study of the few moundbuilders' skulls then known, in his *Cranea Americana* (1839); with an attempt at summing up in Delafield (1839) and Bradford (1841). This is about all that had been added to what Atwater did, when E. G. Squier and E. H. Davis eclipsed all labors preceding theirs, and began the series of the *Smithsonian Contributions* with their *Ancient Monuments of the Mississippi Valley* (Washington, 1847 and 1848).[1] During the preceding two years they had opened over two hundred mounds, and explored about a hundred earthwork enclosures, and had gathered a considerable collection of specimens of moundbuilders' relics.[2] They had begun their work under the auspices of the American Ethnological Society, but the cost of the production of the volume exceeded the society's resources, and the transfer was made to the Smithsonian Institution. The work took a commanding position at once, and still remains of essential value, though some of the grounds of its authors are not acceptable to present observers; and indeed in his work on the mounds of New York, which the Smithsonian Institution included in the second volume of their *Contributions*, Squier found occasion to alter some of his opinions in his earlier work, or at least to ascribe the mounds of that State to the Iroquois. The third volume of the same *Contributions* (1852) introduces to us one of the ablest of the local investigators in a paper by Charles Whittlesey, of "Descriptions of Ancient Works in Ohio," — the forerunner of numerous papers which he has given



COL. CHARLES WHITTLESEY.*

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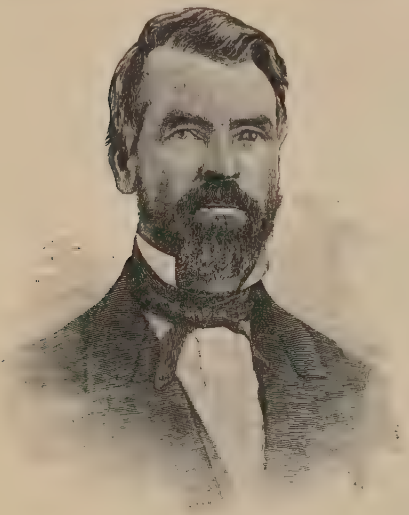
[1] Haven, 117. This publication was anticipated by a condensed statement in Squier's *Observation on the Aboriginal Monuments of the Mississippi Valley*, in the second volume of the *Trans. Amer. Ethnol. Soc.* (N. Y., 1847), and in his *Observations on the Uses of the Mounds of the West, with an attempt at their Classification* (New Haven, 1847). Cf. also *Harper's Mag.*, xx. 737; xxi. 20, 165; *Amer. Jour. Science*, lxi. 305.

[2] These went in 1863 to the Blackmore collection in Salisbury, Eng., and are described in Stevens' *Flint Chips.*

* After a photograph kindly furnished by the Hon. C. C. Baldwin, of Cleveland, Ohio, who has printed a memorial of his friend with a list of his writings in *Tract 68 of the Western Reserve Hist. Soc.*

to the public in elucidation of the mounds.[1] Three years later (1855), in the seventh volume of the *Smithsonian Contributions*, a new field in the emblematic and animal mounds of the northwest was for the first time brought to any considerable extent to public attention in the paper by Increase A. Lapham, on the "Antiquities of Wisconsin." Lapham had made his explorations under the auspices of the American Antiquarian Society,[2] and his manuscript had been revised by Haven, when it was decided to consign it for publication to the Smithsonian Institution.


INCREASE A. LAPHAM.*

The animal mounds had been indeed earlier mentioned, and the great serpent mound of Ohio had long attracted attention; but it was in the territory now known as Wisconsin that these mounds were found chiefly to abound. Long, in 1823, speaks of mounds in this region; but the forest coverings seem to have prevented any observer detecting their shapes till Lapham first noted this peculiarity in 1836. In April, 1838, R. C. Taylor was the earliest to figure them in the *Amer. Journal of Science* (Silliman's), and again they were described by S. Taylor in *Ibid.*, 1842. Prof. John Locke referred to them in a *Report on the mineral lands of the United States*, made to Congress in 1844. William Pidgeon, who had been a trader among the Indians, published in his *Traditions of De-coo-dah, and Antiquarian researches: comprising extensive exploration, surveys and excavations of the Mound Builders in America; the traditions of the last Prophet of the Elk Nation, relative to their origin and use, and the evidences of an ancient population more numerous than the present Aborigines* (N. Y., 1853; again 1858) what he pretended was in large part the results of his intercourse with an Indian chief, involving some theories as to the symbolism of the mounds. The book contained so many palpable perversions, not to say undisguised fictions, that the Smithsonian Institution refused to publish it;[3] and the book has never gained any credit, though some unguarded writers have unwittingly borrowed from it.[4]

In the eighth volume of the *Smithsonian Contributions*,[5] Haven, the librarian of the Amer. Antiq. Soc., summed up the results of mound exploration as they then stood. The steady and circumspect habit of Haven's mind was conspicuous in his treatment of the mounds. It is to him that the later advocates of the identity of their builders with the race of the red Indians look as the first sensibly to affect public opinion in the matter.[6] He argued against their being a more advanced race (p. 154), and in his *Report* of the Am. Antiq. Soc., in 1877 (p. 37), he held that it might yet be proved that the moundbuilders and red Indians were one in race, as M'Culloh had already suggested.

At the time when Haven was first intimating (1856) that this view might yet become accepted, it was doubtless held to be best established that those who built the mounds were quite another race from those who lived among them when Europeans first knew the country. The fact that the Indians had no tradition of their origin was held to be almost conclusive, though it is alleged that the southern Indians in later times retained no recollections of the expedition of De Soto, and Dr. Brinton thinks that it is common for Indian traditions to die out.[7] It is not till recent years that any considerable number of moundbuilder skulls have been known, and from the scant data which the early craniologists had, their opinion seems to have coincided with those in favor of a vanished race.[8] It was a favorite theory, not yet wholly departed, that they were in some way connected with the more southern peoples, the Pueblo Indians, the Aztecs, or the Peruvians; either that they came from them, or migrated south and became one with them.[1] The bolder theory, that we see their descendants in the red Indians, is perhaps gaining ground, and it has had the support of the Bureau of Ethnology and some able expounders.[2]

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[1] Cf. *Trans. Amer. Asso. Adv. Sci.*, 1873, and a paper "On the weapons and military character of the race of the mounds" in the *Boston Soc. Nat. Hist. Mem.*, i. 473 (1869).

[2] *Proceedings*, Oct. 23, 1852, where are plans of those at Crawfordsville, and of others in the dividing ridge between the Mississippi and the Kickapoo rivers. Cf. *Ibid.* Oct., 1876.

[3] P. G. Thomson's *Bibliog. of Ohio*, no. 925.

[4] As, for instance, Conant's *Footprints of Vanished Races* (1879). Cf. T. H. Lewis in the *Amer. Journal of Archæology*, Jan., 1886 (ii. 65).

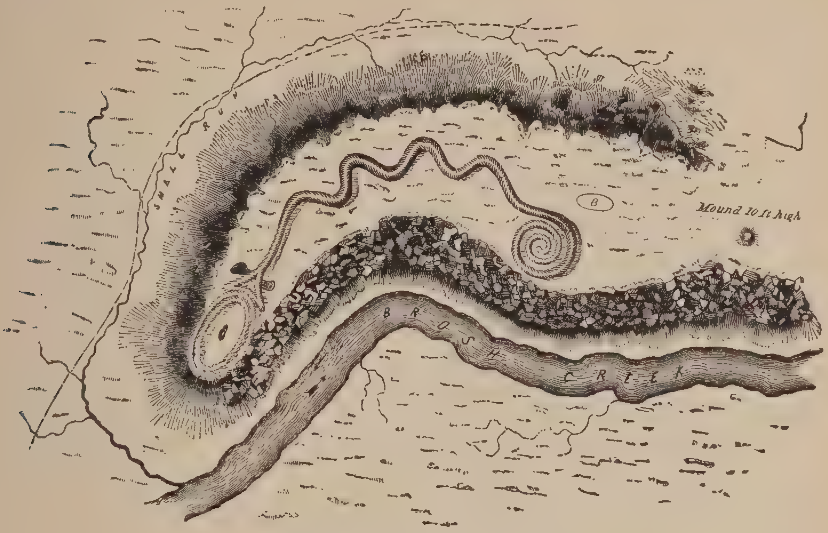
[5] *Archæology of the U. S.* (1856).

[6] M'Culloh in 1829 had come to a similar conclusion, and Gallatin and Schoolcraft have somewhat followed him.

[7] *Hist. Mag.*, Feb., 1866. Cf. Charlevoix.

[8] This was Dr. J. C. Warren's view in 1837, in a paper before the *Brit. Asso. Adv. Science*. Cf. also Blumenbach, Morton, Nott, and Gliddon.

* Engraved from a photograph dated 1863, kindly furnished by his friend, Prof. J. D. Whitney. Lapham died in 1875. Cf. *Amer. Journal of Science*, x. 320; xi. 326, 333; *Trans. Wisc. Acad. Science*, iii. 264.



THE GREAT SERPENT MOUND.*

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[1] Bancroft (*Nat. Races*, v. 539) thinks they were connected in some obscure way with these southern nations, and in 1875 could write (p. 787) that "most and the best authorities deem it impossible that the moundbuilders were ever the remote ancestors of the Indian tribes." Dawson (*Fossil Men*, 55) deems the modern Pueblo Indians to be their representatives. Brasseur supposes the Toltecs came from them. (Cf. also Short, 492; and S. B. Evans, in *Kansas City Rev.*, March, 1882.) John Wells Foster, who had for some years written on the subject, gathered his results in a composite volume, *Prehistoric Races of the United States* (Chicago, 1873, 1878, 1881, etc.), in which he held to the theory of their migrating south and developing into the civilization of Central America. Cf. his paper in the *Trans. Chicago Acad. Nat. Sci.*, vol. i., and his abstract of it in his *Mississippi Valley* (1869, p. 415). J. P. MacLean's *Moundbuilders* (Cincinnati, 1879) takes similar ground. Morgan (*Peab. Mus. Rept.*, xii. 552) holds that they cannot be classed with any known Indian "stock," and that the "nearest region from which they could have been derived is New Mexico." Wills de Haas takes exception to this view in the *Trans. Anthropological Soc. of Washington* (1881). Cf. R. S. Robertson in *Compte Rendu, Congrès des Américanistes* (1877), xi. 39.

[2] Major Powell says, that years ago he reached the conclusion that the modern Indians must have raised at least some of the mounds in the Mississippi Valley (*Bur. of Ethnol. Rept.*, iv. p. xxx). Cf. also Powell's paper in *Science*, x. 267. In the second of these reports (p. 117) Henry W. Henshaw sets forth the views, which the Bureau maintained; and he defended these views in the *Amer. Antiquarian*, viii. 102. The leading member, however, of the Bureau staff, who is working in this field, is Cyrus Thomas. In the *Nat. Mus. Report* (1887) he defined the aim and character of the *Work in Mound Exploration of the Bureau of Ethnology*, also issued separately. In this it was stated that over 2,000 mounds had been opened, and 38,000 relics gathered from them; but nothing to afford any clue to the language which the moundbuilders spoke. The conclusions reached were: —

First, the mounds are as diversified as the Indian tribes are.

Second, they yield no signs of a superior race.

Third, their builders and the Indians are the same.

Fourth, the accounts of the early European visitors of the Indians found here correspond to the disclosures of the mounds.

Fifth, certain kinds of mounds in certain localities are the work of tribes now known; and there are no signs about the mounds to connect them with the Pueblo Indians or those farther south.

Thomas, in the *Fifth Report* (1888), described the "Burial Mounds of the northern sections of the U. S." He says that the character of the mounds and their contents indicate the possibility of dividing the territory they occupy roughly into eight districts, each with some promi-

* This follows a survey given in Squier's *Serpent Symbol* (N. Y., 1851), p. 137. It is criticised by Putnam in *Peabody Museum Reports*, xviii. 348, and *Amer. Antiq. Soc. Proc.*, Oct., 1883. Putnam has recently purchased over sixty acres about the effigy, which is to be held by the trustees of the Peabody Museum as a park (*Repts.*, xxi. 14); and his recent explorations show that the projections in the side of the head (shaded dark in the cut) are not a part of the construction. He also finds two distinct periods of occupation in this region, to the oldest of which he attributes this work (*Peab. Mus. Rept.* 1888). W. H. Holmes made a survey in 1886 (*Amer. Antiquarian*, May, 1887, ix. 141; *Science*, viii. 624, Dec. 31, 1886). Cf. J. P. MacLean, in *Amer. Antiquarian*, vii. 44, and his *Moundbuilders*, p. 56; Baldwin's *Anc. America*, 29. T. H. Lewis describes a snake mound in Minnesota (*Science*, ix. 393). On the serpent symbol see S. D. Peet, in *Amer. Antiquarian*, viii. 197; ix. 13, where he manifests a somewhat omnivorous appetite.

Of the opposing theory of a disappeared race, Capt. Heart in reply to Barton (*Amer. Philolog. Asso. Proc.* iii.) gave, as Thomas thinks, "the earliest clear and distinct expression," but Squier and Davis may be considered as first giving it definite meaning; and though Squier does not seem to have actually revoked this judgment as respects the mounds in the Mississippi valley, he finally reached the conclusion that those in New York were really the work of the Iroquois.[1] This ancient-race theory, sometimes amounting to a belief in their autochthonous origin, has impressed the public through some of the best known summaries of American antiquities, like those of Baldwin, Wilson, and Short,[2] and has been adopted by men of such reputation as Lyell.[3] The position taken by Professor F. W. Putnam, the curator of the Peabody Museum of Archæology at Cambridge, is much like that taken earlier by Warden in his *Recherches*, that both views are, within their own limitations, correct, and, as Putnam expresses it, "that many Indian tribes built mounds and earthworks is beyond doubt; but that all the mounds and earthworks of North America are by these same tribes, or their immediate ancestors, is not thereby proved."[4] Thomas (*Fifth Report*, *Bureau Ethnol.*) holds this statement to be too vague. It is certainly shown in the whole history of archæological study that uncompromising demarcations have sooner or later to be abandoned.

Morgan finds it difficult to dissociate the mounds with his favorite theory of communal life.[5] There is no readier way of marking the development of opinion on this question than to follow the series of the *Annual Reports* of the Smithsonian Institution, as hardly a year has passed since 1861 but these *Reports* have had in them contributions on the subject.[6] Among periodicals, the more constant attention to the mounds is conspicuous in the *American Antiquarian*.[7]

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nent characteristic, and he roughly distinguishes these sections as of Wisconsin; the Upper Mississippi; Ohio; New York; Appalachian; the Middle Mississippi; the Lower Mississippi and the Gulf. He holds that the moundbuilding people existed from about the fifth or sixth century down to historic times.

Taking for his texts the mounds of the Appalachian districts, he has presented anew his grounds for believing this region at least to have had the red Indian race for the constructors of its mounds, and that the Cherokees were that race. Carr had already (1876), from investigating a truncated oval mound in Virginia, and comparing it with Bartram's (*Travels*, 365) description of a Cherokee council-house (*Peabody Mus. Rept.*, x. 75), reached the conclusion that that particular mound was built by the Cherokees. Thomas further undertakes to prove that the Cherokees once occupied the Appalachian region, and that implements of the white men are found in some of the mounds, bringing them down to a period since the contact with Europeans. The habits of the builders of these mounds are, as he affirms, known to correspond to what we know from historic evidence were the habits of the Cherokees.

Thomas has also communicated the views of the Bureau in other ways, as in the *Amer. Antiquarian*, vi. 90; vii. 65; *Mag. Amer. Hist.*, May, 1884, p. 396; 1887, p. 193; July and Sept., 1888. In these papers, among other points, he maintains that the defensive enclosures of northern Ohio are due to the Iroquois-Huron tribes, and he accepts the view of Peet and Latham, that the animal mounds are more ancient than the simpler forms. Other investigators have adopted, in some degree, this view. Horatio Hale thinks the Cherokees of Iroquois origin, and that they may have mingled with the moundbuilders. C. C. Baldwin holds the Allegheni, Cherokees, and the moundbuilders to be the same.

Prominent among those who have adopted this red-Indian theory are Judge M. F. Force and Lucien Carr. In 1874 Force published at Cincinnati a paper, which he read before the literary club of that city; and in 1877 he prepared a paper on the race of the mound-builders, which appears in French in the *Compte Rendu, Congrès des Américanistes* (1877, i. p. 121), and in English, *To what Race did the Moundbuilders belong* (Cincinnati, 1875). He maintains that the race, which shows no differences from the modern Indians, flourished till about 1,000 years ago, and that some of them still survived in the Gulf States in the sixteenth century, and that their development was about on the plane of the Pueblos, higher than the Algonquins and lower than the Aztecs.

Carr's *Mounds of the Mississippi Valley historically considered* makes part of the second volume of Shaler's *Kentucky Survey*, and was also issued separately (1883). It is the most elaborate collation of the accounts of the early travellers, and of others coming in contact with the Indians at an early day, which has yet been made, and his foot-notes are an ample bibliography of this aspect of the subject. He holds that these early records prove that nothing has been found in the mounds which was not described in the early narratives as pertaining to the Indians of the early contact. He aims also particularly to show that these early Indians were agriculturists and sun-worshippers. Brinton, reviewing the paper in the *American Antiquarian* (1883, p. 68), holds that Carr goes too far, and practises the arts of a special pleader. Brinton's own opinions seem somewhat to have changed. In the *Hist. Mag.*, Feb., 1866, p. 35, he considers the moundbuilders as not advanced beyond the red Indians; and in the *American Antiquarian* (1881), iv. 9, in inquiring into their probable nationality, he thinks they were an ancient people who were driven south and became the moundbuilding Chahta.

Other supporters of the red Indian view are Edmund Andrews, in the *Wisconsin Acad. of Science*, iv. 126; P. R. Hoy, in *Ibid.* vi.; O. T. Mason, in *Science*, iii. 658; Nadaillac, in *L'Amérique préhistorique*; E. Schmidt, in *Kosmos* (Leipzig), viii. 81, 163; G. P. Thurston, in *Mag. Amer. Hist.*, 1888, xix. 374.

[1] This is denied in Fred. Larkin's *Anc. Man in America* (N. Y.).

[2] J. D. Baldwin's *Anc. America* (N. Y., 1871). D. Wilson's *Prehistoric Man*, i. ch. 10, etc., who holds that "the moundbuilders were greatly more in advance of the Indian hunter than behind the civilized Mexican;" and he claims that the proof deduced from the Indian type of a head discovered in a moundbuilder's pipe (i. 366) is due to a perverted drawing in Squier and Davis. Short, *No. Amer. of Antiq.*, believed they were of the race later in Anahuac. Gay, *Pop. Hist. U. S.*, i. ch. 2, believes in the theory of a vanished race. In 1775 Adair thought the works indicated a higher military energy than the modern Indian showed.

[3] *Antiq. of Man*, 4th ed. 42.

[4] Putnam's papers and the records of his investigations can be found in his *Peabody Mus. Reports*, xvii., xviii., xix., xx., etc. *Proc. Boston Soc. Nat. Hist.*, xv.; *Amer. Naturalist*, June, 1875; *Kansas City Rev.*, 1879, etc.

[5] *No. Am. Rev.*, cxxiii., for "houses of the moundbuilders," and also in his *Houses and House Life*, ch. 9. Cf. on the other hand C. Thomas in *Mag. Amer. Hist.*, Feb., 1884, p. 110.

[6] Rhee's *Catalogue*, p. 252–3.

[7] S. D. Peet, who edits this journal, has advanced in

The basis for estimating the age of the mounds is threefold. In the first place, there are very few found on the last of the river terraces to be reclaimed from the stream. In the second place, the decay of the skeletons found in them can be taken as of some indication, if due regard be had to the kind of earth in which they are buried. Third, the age of trees upon them has been accepted as carrying them back a certain period, at least, though this may widely vary, if you assume their growth to be subsequent to the abandonment of the mounds, or if, as Brinton holds,[1] the trees were planted immediately upon the building. The dependence upon counting the rings is by no means a settled opinion as to all climes; but in the temperate zone the best authorities place dependence upon it. Unfortunately it cannot carry us back much over 600 years.[2]

The early attempts to disclose the ethnological relations of the moundbuilders on cranial evidence were embarrassed by the fewness of the skulls then known. Morton (*Crania Americana*) called the four examined by him identical with those of the red Indian.[3] At present, considerable numbers are available; but still Wilson (*Prehistoric Man*, ii. 128) holds that "we lack sufficient data," and in the consideration of them sufficient care has not always been taken to distinguish intrusive burials of a later date.[4]

J. W. Foster (*Prehist. Races*, ch. 8; *Amer. Assoc. Adv. Sci. Trans.*, 1872; and *Amer. Naturalist*, vi. 738) held to a lower type of skull, on this evidence, than Wilson (*Prehist. Man*, ii. ch. 20) contended for. There are examples of the wide difference of views (MacLean, 142), when some, like Morgan, connect them with the Pueblo skulls (*No. Amer. Rev.*, cix., Oct., 1869), and others, like Morton, Winchell, Wilson, Brasseur, and Foster, find their correspondences in those of Mexico and Peru.[5] Putnam, whose experience with mound skulls is greatest of all, holds to the southern short head and the northern long head (*Rept.* 1888). Probably we have no better enumeration of the variety of objects and relics found in the mounds, though much has since been added to the collection, than in Rau's *Catalogue of the Archæological Collection of the National Museum* (Washington, 1876).[6] Unfortunately he shows little or no discrimination between discoveries in the mounds and those of the surface. The interest in such collections has naturally brought prominently to the attention of every student of such collections the tricks of fraudulent imitators, and there are several well-known instances of protracted controversies on the genuineness of certain relics.[7]

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one of his papers (vii. 82) that some of these earthworks are Indian game drives and screens. (He also contributed a classification of them to the *Congrès des Américanistes*, 1877, i. 103.) The paper by J. E. Stevenson (ii. 89), and that by Horatio Hale on "Indian Migrations" (Jan.-April, 1883), are worth noting. The *Compte Rendu, Congrès des Américanistes*, 1875 (i. 387), has Joly's "Les Moundbuilders, leurs Œuvres et leurs Caractères Ethniques," and that for 1877 has a paper by John H. Becker and Stronck. That by R. S. Robertson in *Ibid.* (i. p. 39) is also reprinted in the *Mag. Amer. Hist.* (iv. 174), March, 1880; while in March, 1883, will be found some of T. H. Lewis's personal experiences in exploring mounds. Some other periodical papers are: W. de Haas, in *Trans. Am. Asso. Adv. Science*, 1868; D. A. Robertson, in *Journal Amer. Geog. Soc.*, v. 256; A. W. Vogeles and S. L. Fay, in *Amer. Naturalist*, xiii. 9, 637; E. B. Finley in *Mag. Western Hist.*, Feb., 1887, p. 439; *Science*, Sept. 14, 1883: Squier, in *American Journal Science*, liii. 237, and in *Harper's Monthly*, xx. 737, xxi. 20, 165; C. Morris, in *Nat. Quart. Rev.*, Dec. 1871, 1872, April, 1873; Ad. F. Fontpertius on "Le peuple des mounds et ses monuments" in the *Rev. de Géog.* (April and August, 1881); E. Price, in the *Annals of Iowa*, vi. 121; Isaac Smucker, in *Scientific Monthly* (Toledo, Ohio), i. 100.

Some other references, hardly of essential character, are: H. H. Bancroft, *Nat. Races*, iv. ch. 13; v. 538; Gales's *Upper Mississippi, or Historical Sketches of the Moundbuilders* (Chicago, 1867); Southall's *Recent Origin of Man*, ch. 36; Wm. McAdams's *Records of ancient races in the Mississippi valley; being an account of some of the pictographs, sculptured hieroglyphs, symbolic devices, emblems and traditions of the prehistoric races of America, with some suggestions as to their origin* (St. Louis, 1887); Brühl's *Culturvölker des alten Amerika*; J. D. Sherwood, in Stevens's *Flint Chips*, 341; E. Pickett's *Testimony of the Rocks* (N. Y.).

[1] *Hist. Mag.*, Feb., 1866.

[2] Cf. *Congrès des Amér.*, 1877, i. 316; C. Thomas in *Amer. Antiq.*, vii. 66; Warden's *Recherches*, ch. 4. Baldwin's *Anc. America*, ch. 2.

[3] Cf. Short, p. 158.

[4] Force, *To what Race*, etc., p. 63.

[5] Cf. Henry Gillman's "Ancient Men of the Great Lakes" in *Amer. Assoc. Adv. Sci.* (Detroit, 1875), pp. 297, 317; *Boston Nat. Hist. Soc. Proc.*, iv. 331; *Smithsonian Rept.*, 1867, p. 412; C. C. Jones's *Antiq. Southern Indians; Peabody Mus. Repts.*, iv., vi., xi.; Jos. Jones's *Aborig. Remains of Tennessee;* Jeffries Wyman in *Am. Journal of Arts*, etc, cvii. p. i.; W. J. McGee in *Ibid.* cxvi. 458; and Dr. S. F. Landrey on "A moundbuilder's brain" in *Pop. Science News* (Boston, Oct., 1886, p. 138).

[6] Cf. Holmes's "Objects from the Mounds" in Powell's *Bur. of Ethnol. Repts.*, iii.; C. C. Baldwin's "Relics of the Moundbuilders" in *West. Reserve Hist. Soc. Tract*, no. 23 (1874); Foster on their stone and copper implements in *Chicago Acad. Science*, i. (1869); objects from the Ohio mounds in Stevens's *Flint Chips*, 418; images from them in *Science*, April 11, 1884, p. 437. In the mounds of the Little Miami Valley, native gold and meteoric iron have been found for the first time (*Peab. Mus. Rept.*, xvi. 170).

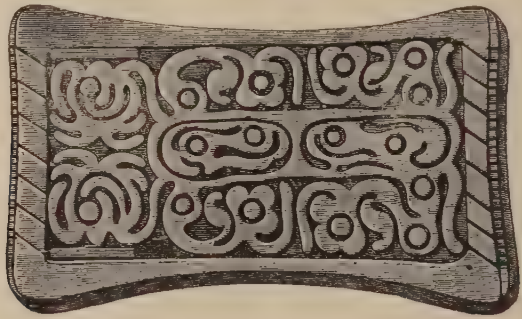
[7] See, on such impositions in general, MacLean's *Moundbuilders*, ch. 9; C. C. Abbott in *Pop. Sci. Monthly*, July, 1885, p. 308; Wilson's *Prehist. Man*, ii. ch. 19; Putnam in *Peab. Mus. Repts.*, xvi. 184; *Fourth Rept. Bur. Ethnol.* 247.

The best known of the disputed relics are the following: The largest mound in the Ohio Valley is that of the Grave Creek, twelve miles below Wheeling, which was earliest described by its owner, A. B. Tomlinson, in 1838. It is seventy feet high and one thousand feet in circumference. (Cf. Squier and Davis, Foster, MacLean, *Olden Time*, i. 232; and account by P. P. Cherry — Wadsworth, 1877.) About 1838 a shaft was sunk by Tomlinson into it, and a rotunda constructed in its centre out of an original cavity, as a show-room for relics; and here, as taken from the mound, appeared two years later what is known as the Grave Creek stone, bearing an inscription of inscrutable characters. The supposed relic soon attracted attention. H. R. Schoolcraft pronounced its twenty-two characters such "as were used by the Pelasgi," in his *Observations respecting the Grave creek mound, in Western Virginia; the antique inscription discovered in its excavation; and the connected evidence of the occupancy of the Mississippi valley during the mound period, and prior to the discovery of America by Columbus*, which appeared in the *Amer. Ethnological*

There remains in this survey of the literature of the mounds in all their varieties, to go over it, finally, in relation to their geographical distribution :[1] —

New England is almost destitute of these antiquities. The one that has attracted some attention is what is described as a fortification in Sanbornton, in New Hampshire, which when found was faced with stone externally, and the walls were six feet thick and breast-high, when described about one hundred and fifteen years ago. There is a plan of it, with a descriptive account, preserved in the library of the American Antiq. Society,[2] and another plan and description in M. T. Runnels's *Hist. of Sanbornton* (Boston, 1882), i. ch. 4. Squier also figured it.

As we move westward, the mounds begin to be numerous in the State of New York, and particularly in the western part of it. One of the earliest descriptions of them, after that of the missionary Kirkland (about 1788), is in the "Journal of the Rev. John Taylor while on a mission through the Mohawk and Black River Country in 1802," which was first printed, with plans of the works examined, in the *Documentary Hist. New York* (vol. iii. quarto ed.). In 1818 DeWitt Clinton published at Albany his *Memoir on the Antiquities of*



CINCINNATI TABLET.*

Soc. Trans., i. 367 (N. Y., 1845). Cf. his *Indian Tribes*, iv. 118, where he thinks it may be an "intrusive antiquity." The French savant Jomard published a *Note sur une pierre gravée* (Paris, 1845, 1859), in which he thought it Libyan. Lévy-Bing calls it Hebrew in *Congrès des Amér.* (Nancy, i. 215). Other notices are by Moïse Schwab in *Revue Archéologique*, Feb., 1857; José Perez in *Arch. de la Soc. Amér. de France* (1865), ii. 173; and in America in the *Amer. Pioneer*, ii. 197; Haven's *Archæol. U. S.*, 133, and *Amer. Antiq. Soc. Proc.*, April 29, 1863, pp. 13, 32; *Amer. Antiquarian*, i. 139; Bancroft's *Nat. Races*, v. 75.

Squier promptly questioned its authenticity (*Amer. Ethnol. Soc. Trans.*, ii.; *Aborig. Mts.*, 168). Wilson laughed at it (*Prehistoric Man*, ii. 100). Col. Whittlesey has done more than any one to show its fraudulent character, and to show how the cuts of it which have been made vary (*Western Reserve, Hist. Soc. Tracts*, nos. 9 (1872), 33 (1876), 42 (1878), and 44 (1879).) Cf. on this side Short, p. 419; and *Fourth Rept. Bur. Ethnol.*, 250. Its authenticity is, however, maintained by MacLean (*Moundbuilders*, Cinn., 1879), who summarizes the arguments *pro* and *con.*

What is known as the Cincinnati tablet was found on the site of that city in 1841 (*Amer. Pioneer*, ii. 195). Squier accepted it as genuine, and thought it might be a printing-stone for decorating hides (*Amer. Ethnol. Soc. Trans.*, ii.; *Aborig. Mts.* (1847), p. 70). Whittlesey at first doubted it (*West. Res. Hist. Tracts*, no. 9), but was later convinced of its genuineness by Robert Clarke's *Prehistoric Remains found on the site of Cincinnati* (privately printed, Cinn., 1876).

The so-called Berlin tablet was found in Ohio in 1876. S. D. Peet believes it genuine (*Amer. Antiq.*, i. 73; vii. 222).

On the Rockford tablet, see Short, 44.

The Davenport tablets, found by the Rev. J. Gass in a mound near Davenport, in Jan., 1877, are described in the *Davenport Acad. Proc.*, ii. 96, 132, 221, 349; iii. 155. Cf. further in *Amer. Asso. Adv. Science Proc.* (April, 1877), by R. J. Farquharson; *Congrès des Amér.* (1877, ii. 158, with cut). The *American Antiquarian* records the controversy over its genuineness. In vol. iv. 145, John Campbell proposed a reading of the inscription. The suspicions are set forth in vii. 373. Peet, in viii. 46, inclines to consider it a fraud; and, p. 92, there is a defence. Short (pp. 38–39) doubts. In the *Second Amer. Rept. Bur. of Ethnol.*, H. W. Henshaw, on "Animal Carvings," attacked its character. (Cf. *Fourth Rept.*, p. 251.) A reply by C. E. Putnam in vol. iv. of the *Davenport Acad. Proc.*, and issued separately, is called *Vindication of the Authenticity of the Elephant pipes and inscribed tablets in the Mus. of the Davenport Acad.* (Davenport, Iowa, 1885). Cf. Cyrus Thomas in *Science*, vi. 564; also Feb. 5, 1886, p. 119. The question of the elephant pipes is included in the discussion, some denying their genuineness. Cf. also *Amer. Antiq.*, ii. 67; Short, 531; Dr. Max Uhle in *Zeitschrift für Ethnologie*, 1887.

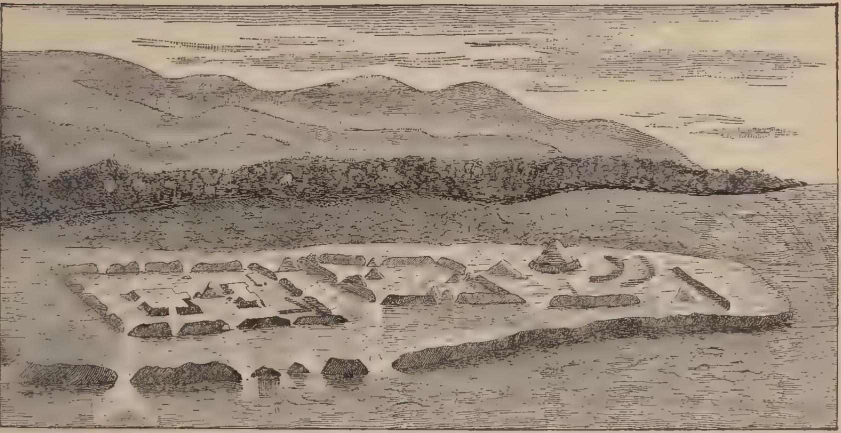
[1] It has been found convenient to follow an advancing line of geographical succession, but the affiliations of the peoples of the mounds seem to indicate that those dwelling on both slopes and in the valleys of the Appalachian ranges should be grouped together, as Thomas combines them in his section on the mounds of the Appalachian District. (*Fifth Rept. Bur. Ethnol.*)

[2] *Proc.*, Oct. 23, 1849, p. 13; Belknap's *New Hampshire*, iii. 89; Haven's *Archæol. U. S.*, 42.

* After a cut in Wilson's *Prehistoric Man*, i. 274, engraved from a rubbing taken from the original. Wilson adds: "Mr. Whittlesey has included this tablet among his Archæological Frauds; but the result of inquiries made by me has removed from my mind any doubt of its genuineness." Cf. other cuts in M. C. Read, *Archæol. of Ohio* (1888); Squier and Davis, fig. 195; Short, p. 45; MacLean, 107; and *Second Rept. Bur. of Ethnol.*, pp. 133–34.

the western part of New York, in which he attributes their origin to the Scandinavians.[1] They were again described in David Thomas's *Travels through the western country in 1816* (Auburn, 1819). There is not much else to note for twenty-five years. In 1845, Schoolcraft made to the N. Y. Senate his *Report on the Census of the Iroquois Indians* (Albany and N. Y., 1846, 1847, 1848), which is better known, perhaps, in the trade edition, *Notes on the Iroquois; or Contributions to the Statistics, Aboriginal History, Antiquities and General Ethnology of Western New York* (N. Y. 1846). In 1850, the *Third Report* of the Regents of the University of the State of N. Y. contains F. B. Hough's paper on the earthwork enclosures in the State. with cuts. The same year (1850) came the essential authority on the New York mounds, E. G. Squier's *Aboriginal Monuments of the State of N. Y., comprising the results of original surveys and explorations. with an illustrative appendix* (Washington, 1850), which the next year made part of the second volume of the *Smithsonian Contributions*.[2] He enumerates in New York about 250 defensive structures, beside burial mounds and in his appendix describes those in New Hampshire and some in Pennsylvania.[3] Some new explorations of the New York mounds were made in 1859 by T. Apoleon Cheney, who describes them, giving plans and cuts, in the *Thirteenth Report* of the Regents of the University.[4]

It was, however, in Ohio that the interest in these mounds was first incited, and that the more thorough



ANCIENT WORKS ON THE MUSKINGUM.*

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[1] D. A. Robertson, *Journal Amer. Geog. Soc.*, vol. v., contends that the North American mounds were built by a colony of Finns long before the Christian era.

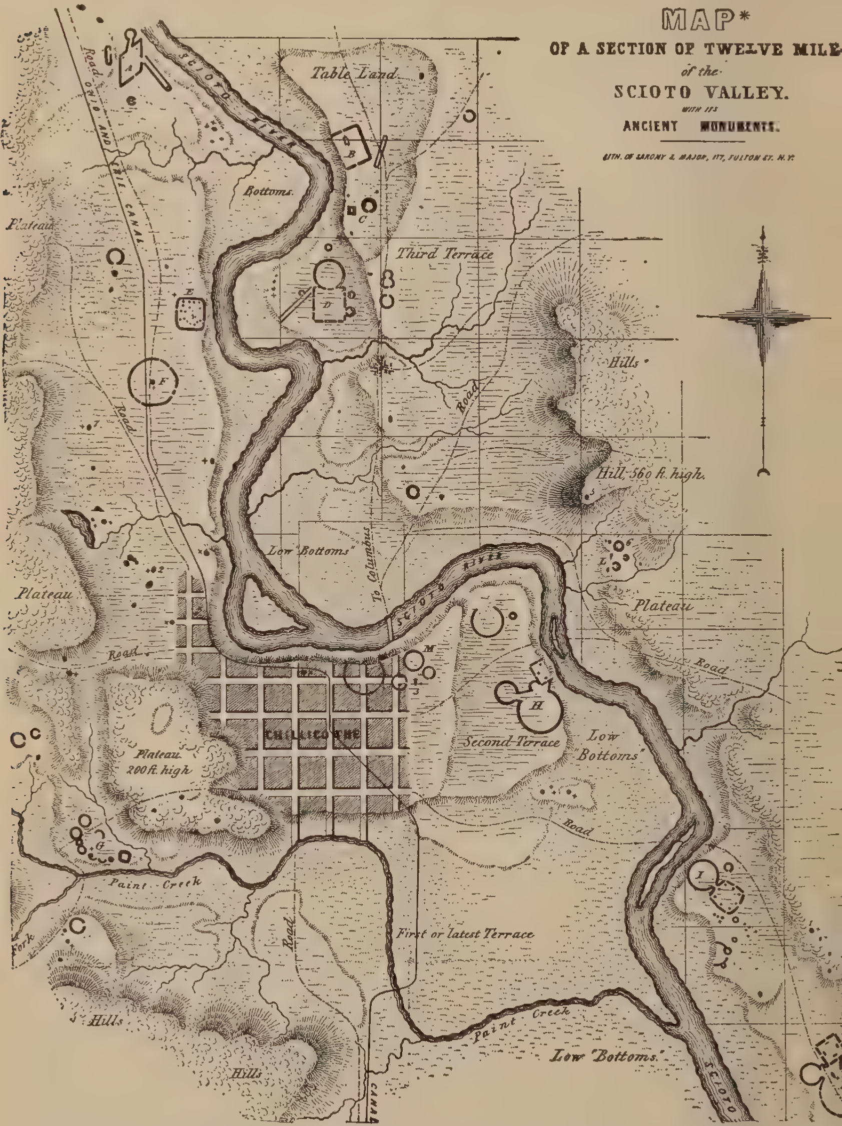
[2] It was also issued, with some additional matter, at Buffalo (1851) as *Antiquities of New York State, with supplement on Antiquities of the West* (1851). Squier has also at this time a paper on these mounds in *N. Y. Hist. Soc. Proc.*, Jan., 1849, p. 41. Cf. *Am. Journal of Science*, lxi. 305, and *Harper's Monthly*, xx. and xxi. His conclusions, distinct from those pertaining to the Ohio mounds, were that the N. Y. earthworks were raised by the red Indians.

[3] Cf. W. M. Taylor on a Pennsylvania mound in *Smithsonian Rept.*, 1877.

[4] A few minor references may be given. The *Smithsonian Reports* have papers by D. Trowbridge (1863); and by F. H. Cushing on those of Orleans County (1874). W. L. Stone held them to have been built by Egyptians, who afterward went south (*Mag. Amer. Hist.*, Sept., 1878, ii. 533). Cf. *Ibid.* v. 35, and S. L. Frey in the *Amer. Naturalist*, Oct., 1879. A small book, *Ancient Man in America* (N. Y., 1880), by Frederic Larkin, takes issue with Squier, and believes the builders were not the modern Indians. He says he found in one of the N. Y. mounds, in 1854, a copper relic, with a mastodon, evidently in harness, scratched upon it! H. G. Mercer's *Lenape Stone* describes a "gorget stone" dug up in Buck's County, Penn., in 1872, which shows a carving representing a fight between Indians and the hairy mammoth, which we are also asked to accept as genuine. What is recognized as an ancient burial mound of the Senecas is described at some length in G. S. Conover's *Reasons why the State should acquire the famous burial mound of the Seneca Indians* (1888).

* Reduced from an early engraving in T. M. Harris's *Journal of a Tour into the territory northwest of the Alleghany, 1803* (Boston, 1805). Harris's plan in relation to the new town of Marietta is given in Vol. VII. p. 540. To follow down the plans chronologically, we find that of Winthrop Sargent, communicated to the Amer. Academy in 1787, reproduced in their *Memoirs*, new ser. v. part i. The *Columbian Mag.*, May, 1787, vol. i. 425, and the *N. Y. Mag.* (1791) had plans. One was in Schultz's *Travels* (1807), 146. Atwater, of course, gave one in 1820. A survey by S. Dewitt, 1822, is in Josiah Priest's *Amer. Antiquities*, 3d ed., Albany, 1833. Others are in the *Amer. Pioneer*, Oct., 1842, June 1843, and in S. P. Hildreth's *Pioneer History*, 212 (Jan., 1843). Whittlesey made the survey in Squier and Davis (who also give a colored view), and it is reduced in Foster. Cf. also *Amer. Antiquarian*, Jan., 1880; *Mag. Amer. Hist.*, 1885, p. 547; Henry A. Shepard's *Antiquities of Ohio* (Cinn., 1887); Nadaillac's *L'Amérique préhistorique*, 105, and *Les prem. Hommes*, ii. 33.

exploration has been made.[1] The earliest pioneers reported upon them. Cutler described them in 1789 in a



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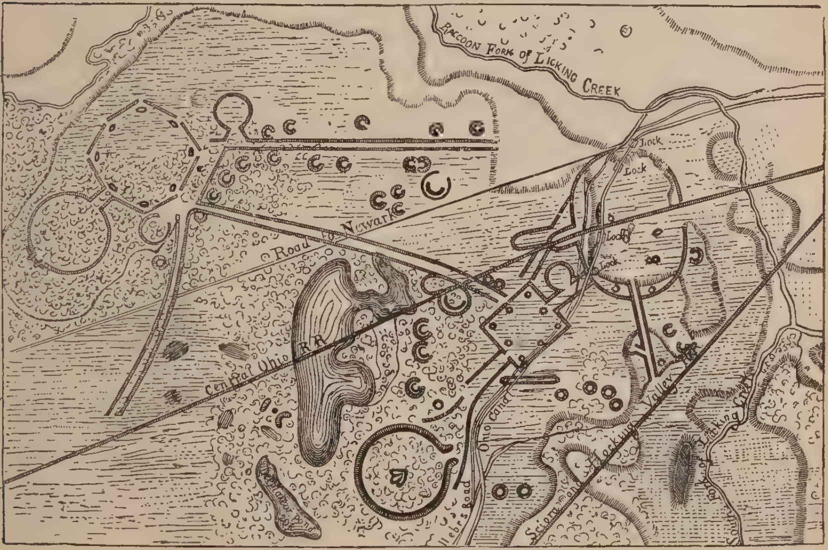
[1] Contributions to a bibliography and lists of the Ohio mounds are found as follows: Mrs. Cyrus Thomas's "Bibliog. of Earthworks in Ohio" in the *Ohio Archæol. and Hist. Quarterly*, June, 1887, et seq.; a lesser list is in Thomson's *Bibliog. of Ohio*, p. 385. Lists of the works are given in the *Ohio Centennial Rept.* and in MacLean's *Moundbuilders*, pp. 230–233. J. Smucker, in the *Amer. Antiquarian*, vi. 43, describes the interest in archæology in the State, and instances the results in the numerous county histories, in the Western Reserve Hist. Soc. pub-

* From E. G. Squier's *Aboriginal Monuments of the Mississippi Valley* (N. Y., 1847), taken from *Amer. Ethnol. Soc. Trans.*, ii. The letters A, B, C, etc. mark the ancient works. Enclosures are shown by broken lines. The mounds are designated by small dots. Some of the best maps which we have showing the geographical positions of groups of mounds accompany Thomas's paper in the *Fifth Rept., Bur. Ethnol.*

letter to Jeremy Belknap.[1] Benj. S. Barton described a mound at Cincinnati in 1799.[2] Dr. Harris in 1805 was seemingly the earliest traveller to note them in *Journal of a Tour*, where he gives one of the earliest engravings. A plan of those at Circleville, with description by J. Kilbourne, is given in the *Ohio Gazetteer* (Columbus, 1817). Caleb Atwater, in 1820, was more familiar with them than with others of his broader field. Warden in his *Recherches* noted the early describers. Gen. Harrison discussed the mounds in his *Discourse on the Aborigines of the Valley of the Ohio* (Cincinnati, 1838). Squier and Davis, of course, brought them within their range,[3] and Col. Whittlesey supplemented their work in the third volume of the *Smithsonian Contributions.* Whittlesey and Matthew C. Read contributed the Report on the Archæology of Ohio, which forms the second portion of the *Final Report of the Ohio State Board of Centennial Managers* (Columbus, 1877), and in it is a list of the ancient enclosures, which is not, as Short says (p. 82), as complete as it should be. A survey of the mounds was made by E. B. Andrews, and published in the *Peabody Mus. Repts.* (no. x.), 1877. The Ohio State Archæological and Historical Society started in June, 1887, the *Ohio archæological and historical Quarterly*, which has vigorously entered the field, and in it (March, 1888) G. F. Wright has reported on the present condition of the mounds. M. C. Read's *Archæology of Ohio* (Cleveland, 1888) was published by the Western Reserve Historical Society, whose series of Tracts is of importance for the study of the mounds.[4] Henry A. Shepard's *Antiquities of the State of Ohio* (Cincinnati, 1887) summarizes the discoveries to date.[5] Thomas (*Fifth Rept. Bur. Ethnol.*) claims that the Ohio mounds were built by Indians, but not by the Indians, nor by the ancestors of them, who inhabited this region at the coming of the whites; but by an Indian race driven south, of whom he finds the modern representatives in the Cherokees.

The works at Marietta, on the Muskingum River, were the earliest observed. Taking the southern and southeastern counties, there are no very conspicuous examples elsewhere, though the region is well dotted


RACCOON FORK OF LICKING CREEK
Lock
Lock
Lock
Lock
Road to Newark
Central Ohio R.R.
Ohio Canal
Hebbs Road
Sciota and Hocking Valley
South Fork of Licking Creek

THE WORKS AT NEWARK, OHIO.*

lications, in those of the Nat. Hist. Soc. of Cincinnati, of the Archæological Soc. at Madisonville, of the Central Ohio Scientific Association (begun 1878), and of the District Hist. Society (beginning its reports in 1877. Cf. P. G. Thomson, *Bibl. of Ohio*, no. 328). The course of the West. Reserve Hist. Soc. is sketched in the *Mag. West. Hist.*, Feb., 1888 (vol. vii.).

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[1] *Life of Cutler*, ii. 14, 252.

[2] *Trans. Amer. Philos. Soc.*, iv.

[3] Their survey is used in Stevens's *Flint Chips* by Sherwood.

[4] Cf. no. 11, 23, 41.

[5] Some minor references: Whittlesey in *Fireland's Pioneer* (June, 1865), and in his *Fugitive Essays* (Hudson, O., 1852). C. H. Mitchener's *Ohio Annals* (Dayton, 1876). *Hist. Mag.*, xii. 240. C. W. Butterfield in *Mag. West. Hist.*, Oct., 1886 (iv. 777). I. Dille in *Smithsonian Rept.*, 1866, p. 359; and Hill and others in *Ibid.* 1877. C. Thomas in *Science*, xi. 314. Thomas J. Brown on artificial terraces in *Amer. Antiquarian*, May, 1888. Howe's *Hist. Collections of Ohio*, as well as the numerous county histories, afford some material.

* After a cut in Wilson's *Prehistoric Man*, i. 269, made from surveys "executed while the chief earthworks could still be traced in all their integrity;" and they "illustrate rites and customs of an ancient American people, without a parallel among the monumental memorials of the old world." Cf. Atwater, Warden, Squier and Davis, and MacLean.

with earthworks.[1] Those at Cincinnati were, after those at Marietta, the earliest to be noticed.[2] The adjacent Little Miami Valley is the region which Professor Putnam and Dr. Metz have been of late so successfully working.[3]

Of all the works in the central portions of Ohio, and indeed of all in any region, those at Newark, in Licking County, are the most extensive, and have been often described.[4] In the east[5] and west[6] there are other of these earthworks; but those in the north have been particularly examined by Col. Whittlesey and others.[7] The enclosure called Fort Azatlan, at Merom on the Wabash River, is the most noticeable in Indiana.[8] In Illinois, the great Cahokia truncated pyramid, 700 feet long by 500 wide and 90 high, is the most important.[9]

Henry Gillman, of Detroit, has been the leading writer on the mounds of Michigan.[10] The supposed connection of their builders with the ancient copper mines of Lake Superior is considered in another place. Thomas (*Fifth Rept., Bur. Ethnol.*) contends that much of the copper found in the mounds was of European make, and had no relation to any aboriginal mining.

Wisconsin is the central region of what are known as the animal, effigy, symbolic, or emblematic mounds. Mention has been made elsewhere of the earliest notices of this kind of earthwork. The most extensive examination of them is the *Antiquities of Wisconsin as surveyed and described by I. A. Lapham* (Washington, 1855), with a map showing the sites.[11] The consideration of these effigy mounds has given rise to various theories regarding their significance, whether as symbols or to totems.[12] It is Thomas's conclusion that the effigy mounds and the burial mounds of Wisconsin were the work of the same people (*Fifth Rept., Bur. Ethnol.*).

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[1] The annexed map of the vicinity of Chillicothe will show their abundance in a confined area. E. B. Andrews on those in the S. E. in *Peabody Mus. Rept.*, x. MacLean's *Moundbuilders* (Cincinnati, 1879) is of no original value except for Butler County. Squier and Davis give a plan of the fortified hill in this county. Walker's *Athens County*. Isaac J. Finley and Rufus Putnam's *Pioneer Record of Ross County* (Cincinnati, 1871). A plan of the High Bank works in this county is given in the *Amer. Antiquarian*, v. 56. The Highland County works, called Fort Hill, are described in the *Ohio Arch. & Hist. Q.*, 1887, p. 260. G. S. B. Hampstead's *Antiq. of Portsmouth* (1875) embodies results of a long series of surveys. Cf. *Journal Anthropological Institute*, vii. 132.

[2] D. Drake's *Picture of Cincinnati* (1815); Harrison in *Ohio Hist. & Philos. Soc.*, i.; Squier and Davis; Ford's *Cincinnati*, i. ch. 2.

[3] The best known of the ancient fortifications of this region is that called Fort Ancient, about 42 miles from Cincinnati. It was surveyed by Prof. Locke in 1843. Cf. L. M. Hosea in *Quart. Journal of Science* (Cinn., Oct., 1874); Putnam in the *Amer. Architect*, xiii. 19; *Amer. Antiquarian*, April, 1878; Force's *Moundbuilders;* Warden's *Recherches;* Squier and Davis, with plan reduced in MacLean, p. 21; Short, 51; and on its present condition, *Peab. Mus. Rept.*, xvi. 168. There is an excellent map of the mounds in the Little Miami Valley, in Dr. C. L. Metz's *Prehistoric Monuments of the Little Miami Valley*, in the *Journal of the Cincinnati Soc. of Nat. Hist.*, vol. i., Oct., 1878. The explorations of Putnam and Metz are recorded in the *Peab. Mus. Repts.*, xvii., xviii. (Marriott mound), and xx. Cf. Putnam's lecture in *Mag. West. History*, Jan., 1888. There are explorations at Madisonville noticed in the *Journal of the Cinn. Soc. Nat. Hist.*, Apr., 1880. Others in this region are recorded in L. B. Welch and J. M. Richardson's *Prehistoric relics found near Wilmington* (Sparks mound), and by F. W. Langdon in the appendix of Short.

[4] M. C. Read's *Archæol. of Ohio* (Cleveland, 1888), with cut. Col. Whittlesey made the survey in Squier and Davis, and it is copied by Foster. O. C. Marsh in *Hist. Mag.* xii. 240; and in *Amer. Journal of Science*, xcii. (July, 1866). Isaac Smucker, a local antiquary, in *Newark American*, Dec. 19, 1872; in *Amer. Hist. Record*, ii. 481; and in *Amer. Antiq.*, iii. 261 (July, 1881). Cf. Nadaillac, 99, and view in Lossing's *War of 1812*, p. 565.

Other antiquities of the central region are described in no. 11 *Western Res. Hist. Soc. Tracts* (Hardin Co.); in *Ohio Arch. Hist. Quart.*, March, 1888 (Franklin Co.); *Amer. Antiq. Soc. Proc.*, April, 1863 (Fairfield Co., etc.).

[5] R. W. McFarland in *Ohio Arch. Hist. Quart.*, i. 265 (Oxford).

[6] Cox in *Am. Assoc. Adv. Sci.*, 1874 (fort in Clarke Co.).

[7] *West. Res. Hist. Soc. Tracts*, no. 41 (1877); and for the Cuyahoga Valley in no. 5 (1871), both by Whittlesey. The works on the Huron River, east of Sandusky, were described, with a plan, by Abraham G. Steiner in *Columbian Mag.*, Sept., 1789, reprinted in *Fireland's Pioneer*, xi. 71. G. W. Hill in *Smithsonian Rept.*, 1874; E. O. Dunning on the Lick Creek mound in *Peab. Mus. Rept.*, v. p. 11; S. D. Peet on a double-walled enclosure in Ashtabula Co. in *Smithsonian Rept.*, 1876. Cf. Cornelius Baldwin on ancient burial cists in northeastern Ohio in *West. Res. Hist. Tracts*, no. 56, and Yarrow on mound-burials in *First Rept. Bur. Ethnol.*

[8] Cf. Putnam in *Bull. Essex Inst.*, iii. (Nov., 1871), and *Boston Soc. Nat. Hist. Proc.* (Feb., 1872); Foster, p. 134, with plan. The *Smithsonian Repts.* cover notices by W. Pidgeon (1867), by A. Patton in Knox and Lawrence counties (1873), and by R. S. Robertson (1874).

[9] *Peabody Mus. Reports*, xii. 473 (1879). For Illinois mounds see Thomas in *Fifth Rept. Bur. Ethnol.;* Davidson and Struve's *Illinois;* E. Baldwin's *La Salle Co.* (Chicago, 1877); W. McAdams's *Antiq. of Cahokia* (Edwardsville, 1883); H. R. Howland in the *Buffalo Soc. Nat. Hist. Bull.*, iii.; and in *Smithsonian Repts.*, by Chas. Rau (1868); largely on agricultural traces; by Dr. A. Patton (1873); by T. M. Perrine on Union Co. (1873); by T. McWhorter and others (1874); by W. H. Pratt on Whiteside Co. (1874); by J. Shaw on Rock River (1877); and by J. Cochrane on Mason Co. (1877).

[10] His papers are in the *Smithsonian Repts.*, 1873, 1875; *Peabody Mus. Reports*, vi. (1873), on the St. Clair River mounds; *Am. Journal of Arts, etc.*, Jan., 1874; *Am. Assoc. Adv. Sci. Proc.*, 1875; on bone relics in *Congrès des Amér.*, 1877, i. 65; and on the Lake Huron mounds, in *American Naturalist*, Jan., 1883. Cf. other accounts in *Michigan Pioneer Collections*, ii. 40; iii. 41, 202; S. D. Peet in *Amer. Antiq.*, Jan., 1888; and on the old fort near Detroit, *Ibid.* p. 37; and Bela Hubbard's *Memorials of a half century.*

[11] The copy in Harvard College library has some annotations by George Gale. Lapham's survey of Aztlan is reproduced in Foster, p. 102. Lapham's book is summarized by Wm. Barry in the *Wisconsin Hist. Soc. Coll.*, iii. 187. These *Collections* contain other papers on mounds in Crawford Co. by Alfred Brunson (iii. 178); on man-shape mounds (iv. 365); J. D. Butler on "Prehistoric Wisconsin" (vii.); on Aztalan (ix. 103).

The *Transactions* of the Wisconsin Acad. of Science are also of assistance: vol. iii., a report of a committee on the mounds near Madison, with cuts; vol. iv., a paper by J. M. DeHart on the "Antiquities and platycnemism [flat tibia bones] of the Moundbuilders."

[12] S. D. Peet has discussed this aspect in the *Amer. Antiquarian* (1880), iii. p. 1; vi. 176; vii. 164, 215, 321

The existence of what is called an elephant or mastodon mound in Grant County has been sometimes taken to point to the age of those extinct animals as that of the erection of the mounds.[1] Putnam, referring to the confined area in which these effigy mounds are found, says that the serpent mound, the alligator mound,[2] and Whittlesey's effigy mound in Ohio, and two bird mounds in Georgia,[3] are the only other works in North America to which they are at all comparable.[4]

When Lewis and Clark explored the Missouri River in 1804–6, they discovered mounds in different parts of its valley; but their statements were not altogether confirmed till the parties of the United States surveyors traversed the region after the civil war, as is particularly shown in Hayden's *Geological Survey, 6th Rept.*, in 1872. Within the present State of Missouri the mounds which have attracted most notice are those near the modern St. Louis.[5] In Iowa (Clayton County) there is said to be the largest group of effigy mounds west of the Mississippi.[6] The mounds of Iowa and the neighboring region are also discussed by Thomas in the *Fifth Rept. Bur. Ethnol.* O. H. Kelley has reported on the remains of an ancient town in Minnesota.[7] In Kansas there is little noticeable,[8] and there is not much to record in Dacotah,[9] Utah,[10] California,[11] and Montana.[12] We find scant accounts of the mounds in Oregon and Washington in the narrative of the Wilkes Exploring Expedition and in the earlier story of Lewis and Clark. Some of the mounds are of doubtful artificiality.[13]

Along the lower portion of the Mississippi, but not within three hundred miles of its mouth, we find in Louisiana other mound constructions, but not of unusual significance.[14]

The first effigy mound, a bear, which was observed south of the Ohio, is near an old earthwork in Greenup County, Kentucky.[15] The mounds of this State early attracted notice.[16] Bishop Madison[17] thought them sepulchral rather than military. In the *Western Review* (Dec., 1819) one was described near Lexington. Rafinesque added a not very sane account of them to Marshall's *History of Kentucky*, in 1824, which was also published separately, and since then all the general histories of Kentucky have given some attention to these antiquities.[18]

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viii. 1; ix. 67. He also examines the evidence of the village life of their builders (ix. 10). Cf. his *Emblematic Mounds*; and his paper in the *Wisconsin Hist. Coll.*, ix. 40.

[1] None of the bones of extinct animals have been found in the mounds; nor has the buffalo, long a ranger of the Mississippi Valley, been identified in the shapes of the mounds. (Cf. Peet on the identification of animal mounds in *Amer. Antiq.*, vi. 176.) Peet holds they followed the mastodon period (*Ibid.* ix. 67). The elephant mound, so called, has been often shown in cuts. (Cf. *Smithsonian Rept.*, 1877, accompanying a paper by J. Warner, and Powell's *Second Rept. Bur. of Eth.*, 153.) Henshaw here discredits the idea of its being intended for an elephant. The evidence of elephant pipes is thought uncertain. Cf. article on mound pipes by Barber in *Amer. Naturalist*, April, 1882.

[2] *Second Rept. Bur. of Ethnol.*, p. 159, where Henshaw thinks it may just as well be anything else. Cf. Isaac Smucker in *Amer. Antiquarian*, vii. 350.

[3] Cf. *Amer. Antiq.*, vi. 254.

[4] *Peab. Mus. Rept.*, xvii., and *Amer. Antiq. Soc. Proc.*, Oct., 1883. He points out that the Ohio effigy mounds have a foundation of stones with clay superposed; the Georgia mounds are mainly of stone; while the Wisconsin mounds seem to be constructed only of earth.

Further references on the Wisconsin mounds: *Smithsonian Repts.*, by E. E. Breed (1872); by C. K. Dean (1872); by Moses Strong (1876, 1877); by J. M. DeHart (1877); and again (1879).

Also: Haven's *Archæol. U. S.*, p. 106; W. H. Canfield's *Sauk County*; DeHart in *Amer. Antiquarian*, April, 1879; their military character in *Ibid.*, Jan., 1881; also as emblems in *Ibid.* 1883 (vi. 7); Nadaillac and other general works. There is a map of those near Beloit — some are in the college campus — in the *American Antiquarian*, iii. 95.

[5] They have been described in the *Smithsonian Reports* by T. R. Peale (1861); and in *Amer. Antiquarian*, July, 1888, by S. D. Peet. Other mounds and relics are described in the *Smithsonian Repts.* (1863) by J. W. Foster; (1870) by A. Barrandt; (1877) by W. H. R. Lykins; and (1879) by G. C. Broadhead; in *Peab. Mus. Repts.*, viii., by Professor Swallow; in *Missouri Hist. Soc. Publ.*, no. 6, by F. F. Hilder; in *Cinn. Quart. Jour. of Sci.*, Jan., 1875, by Dr. S. H. Headlee; in the *Kansas City Rev.*, i. 25, 531; in the *St. Louis Acad. of Science* (1880) by W. P. Potter; Mr. A. J. Conant has been the most prolific writer in *Ibid.*, April 5, 1876; in W. F. Switzler's *History of Missouri* (St. Louis, 1879), and in C. R. Burns's *Commonwealth of Missouri* (1877). Cf. also Poole's *Index*, p. 858.

[6] T. H. Lewis in *Science*, v. 131; vi. 453. On other Iowa mounds, see *Smithsonian Rept.*, by J. B. Cutts (1872); by M. W. Moulton (1877), and again (1879); *Annals of Iowa*, vi. 121; and W. J. McGee in *Amer. Journal Science*, cxvi. 272.

[7] *Smithsonian Rept.*, 1863; and for mounds, 1879. Cf. L. C. Estes on the antiquities on the banks of Missouri and Lake Pepin in *Ibid.* 1866.

[8] *Kansas Rev.*, ii. 617; Joseph Savage and B. F. Mudge in *Kansas Acad. Science*, vii.

[9] *Smithsonian Rept.*, by A. J. Comfort (1871) and by A. Barrandt (1872); W. McAdams in *Amer. Antiquarian*, viii. 153.

[10] *Amer. Naturalist*, x. 410, by E. Palmer; Bancroft, *Nat. Races*, iv. 715.

[11] App. to Gleeson's *Hist. of the Catholic Church in California* (1872), ii., and Bancroft's *Nat. Races*, iv. 695.

[12] P. W. Norris in *Smithsonian Report*, 1879.

[13] Cf. George Gibbs in *Journal Amer. Geogr. Soc.*, iv.; A. W. Chase in *Amer. Jour. Sci.*, cvi. 26; *Amer. Architect*, xxi. 295; and Bancroft, *Nat. Races*, iv. 735.

[14] Cf. S. H. Locket in *Smithsonian Rept.* (1872), and T. P. Hotchkiss in the same, and a paper in 1876; *Amer. Journal Science*, xlix. 38, by C. G. Forshey, and lxv. 186, by A. Bigelow.

[15] T. H. Lewis, with plan, in *Amer. Journal Archæol.*, iii. 375; previously noted by Atwater and by Squier and Davis.

[16] Cf. Filson's *Kentucke*.

[17] *Amer. Philos. Soc. Trans.*, iv., no. 26.

[18] Thomas E. Pickett contributed this part (1871) to Collins's *Hist. Kentucky* (1878), i. 380; ii. 68, 69, 227, 302, 303, 457, 633, 765. Pickett's contribution was published separately as *The testimony of the Mounds* (Marysville,

In Tennessee we find in connection with the earthworks the stone graves, which the explorations of Putnam, about ten years ago, brought into prominence.[1] The chief student of the aboriginal mounds in Georgia has been Col. C. C. Jones, Jr., who has been writing on the subject for nearly forty years.[2] The mounds in the State of Mississippi, as including the region of the Natchez Indians, derive some added interest because of the connection sometimes supposed to exist between them and the race of the mounds.[3] The same characteristics of the mounds extend into Alabama.[4] The mounds in Florida attracted the early notice of John and William Bartram, and are described by them in their *Travels*, and have been dwelt upon by later writers.[5] The seaboard above Georgia has not much of interest.[6] Concerning the mounds along the Canadian belt there is hardly more to be said.[7]

Lubbock classes the signs of successive periods in North America thus: original barbarism, mounds, garden beds, and then the relapse into barbarism of the red Indian. The agricultural age thus follows that of the mound erection, in his view, though, as Putnam says, there seems enough evidence that the constructors of the old earthworks were an agricultural race.[8]

There is another class of relics which, outside the hieroglyphics of Central America, has as yet had little comprehensive study, though the general books on American archæology enumerate some of the inscriptions on rocks, which are so widely scattered throughout the continent.[9]

Ky., 1875). Prof. Shaler, as head of the Geological Survey of Kentucky, included in its Reports Lucien Carr's treatise on the mounds, already mentioned; and touches the subject briefly in his *Kentucky*, p. 45. Cf. also Maj. Jona. Heart in Imlay's *Western Territory;* S. S. Lyon in *Smithsonian Repts.*, 1858, 1870, and R. Peter, in 1871, 1872; F. W. Putnam in *Boston Soc. Nat. Hist. Proc.*, xvii. 313 (1875); and *Nature*, xiii. 109.

[1] The aboriginal remains of Tennessee have successively been treated in John Haywood's *History of Tennessee* (Nashville, 1823); by Gerard Troost in *Amer. Ethnol. Soc. Trans.* (1845), i. 335; by Joseph Jones in *Smithsonian Contributions*, xx. (1876), who connected those who erected the works, through the Natchez Indians, with the Nahuas. Edward O. Dunning had described some of the Tennessee relics in the *Peabody Mus. Repts.*, iii., iv., and v.; but Putnam in no. xi. (1878) gave the results of his opening of the stone graves, with his explorations of the sites of the villages of the people, and described their implements, nothing of which, as he said, showed contact with Europeans. Cyrus Thomas deems these remains the works of the Indian race (*Amer. Antiq.*, vii. 129; viii. 162). The *Smithsonian Repts.* have had various papers on the Tennessee antiquities: I. Dille (1862); A. F. Danilsen (1863); M. C. Read (1867); E. A. Dayton, E. O. Dunning, E. M. Grant, and J. P. Stelle (1870); Rev. Joshua Hall, A. E. Law, and D. F. Wright (1874); and others (in 1877).

L. J. Du Pré, in *Harper's Monthly* (Feb., 1875), p. 347, reports upon a ten-acre adobe threshing-floor, preserved two feet and a half beneath black loam, near Memphis.

[2] Col. Jones's papers are: *Indian Remains in South Georgia, an address* (Savannah, 1859); *Ancient tumuli on the Savannah River; Monumental Remains of Georgia*, part i. (Savannah, 1861); *Amer. Antiq. Soc. Proc.*, April, 1869; *Antiquities of Southern Indians* (1873); on effigy mounds in *Smithsonian Rept.* (1877); and on bird-shaped mounds in *Journal Anthropological Soc.*, viii. 92. Cf. also the early chapters of his *Hist. of Georgia.*

Other writers: H. C. Williams and Geo. Stephenson in *Smithson. Rept.* (1870); and Wm. McKinley and M. F. Stephenson (1872). Cf. *Amer. Ethnol. Soc. Trans.*, iii., on Creeks and Cherokees; and on the great mound in the Etowah Valley, *Amer. Asso. Adv. Sci.* (1871). Thomas (*Fifth Rept. Bur. Ethnol.*) supposes the Etowah mound to be the one with a roadway described by Garcilasso de la Vega as being on De Soto's route. Thomas describes other mounds of this group, giving cuts of the incised copper plates found in them, which he holds to be of European make. This forces him to the conclusion that the larger mound was built before De Soto's incursion and the others later; and as they differ from those in Carolina, he determines they were not built by the Cherokees.

[3] Cf. S. A. Agnew in *Smithsonian Reports* (1867), and J. W. C. Smith (1874, cf. 1879); Jas. R. Page in *St. Louis Acad. Science Trans.*, iii., and *Cinn. Q. Journal of Sci.*, Oct., 1875; Haven, p. 51; and Edw. Fontaine's *How the World was peopled*, 153.

[4] E. Cornelius in *Amer. Journ. Sci.*, i. 223; Pickett's *Alabama*, ch. 3.

[5] Schoolcraft, *Indian Tribes*, iii., and in *N. Y. Hist. Soc. Proc.*, 1846, p. 124. Brinton's *Floridian Peninsula*, ch. 6. *Amer. Antiquarian*, iv. 100; ix. 219. *Smithsonian Reports* (1874), by A. Mitchell, and 1879.

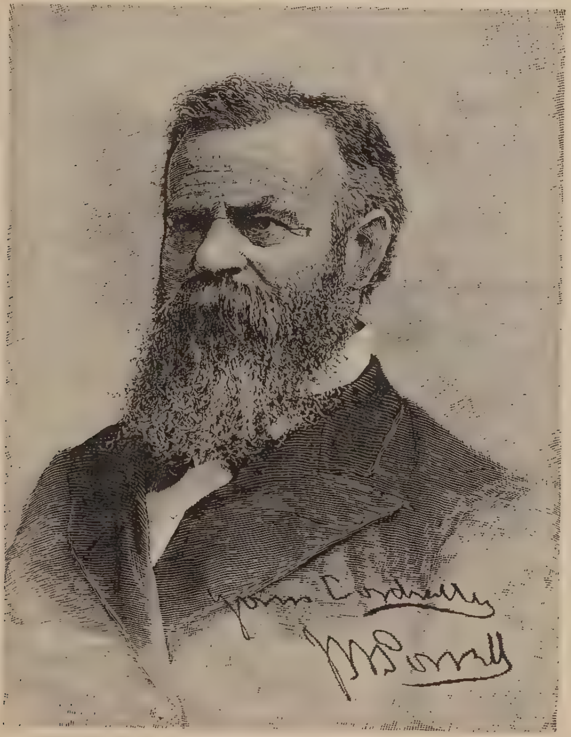
[6] J. M. Spainhour on antiquities in North Carolina, in *Smithson. Rept.*, 1871; T. R. Peale on some near Washington, D. C. (*Ibid.*, 1872); Schoolcraft, on some in Va., in *Amer. Ethnol. Soc. Trans.*, i.; with Squier and Davis, and *Peabody Mus. Rept.*, x., by Lucien Carr. There is a plan of a fort in Virginia in the *Amer. Pioneer*, Sept., 1842, and a paper on the graves in S. W. Virginia in *Mag. Amer. Hist.*, Feb., 1885, p. 184.

[7] W. E. Guest on those near Prescott, in *Smithsonian Rept.*, 1856. T. C. Wallbridge describes some at the bay of Quinté in *Canadian Journal* (1860), v. 409, and Daniel Wilson for Canada West in *Ibid.*, Nov., 1856. T. H. Lewis on the remains in the valley of the Red River of the North, in *Amer. Antiquarian*, viii. 369; and for those in Manitoba papers by A. McCharles in the *Amer. Journal of Archæology*, iii. 72 (June, 1887), and by George Bryce in *Manitoba Hist. and Sci. Soc. Trans., No. 18* (1884–85). Bancroft's *Nat. Races*, iv. 738, etc., for British Columbia.

[8] Cf. for garden beds *Amer. Antiquarian*, i. and vii.; Foster, 155; Bela Hubbard's *Memorials of a half century* (Detroit). Shaler (*Kentucky*, 46) surmises that it was the buffalo coming into the Ohio Valley, and affording food without labor, that debased the moundbuilders to hunters.

[9] Cf. Col. Whittlesey on rock inscriptions in the United States in *West. Res. Hist. Soc. Tract No. 42.* Col. Garrick Mallory's special studies of pictographs are contained in the *Bull. U. S. Geological Survey of the territories* (1877), and in the *Fourth Rept. Bur. Ethnol.* Wm. McAdams includes those of the Mississippi Valley in his *Records of ancient races in the Mississippi Valley* (St. Louis, 1887). Cf. *Hist. Mag.*, x. 307. Those in Ohio are enumerated in the *Final Rept. of the State Board of Centennial Managers* (1877), by M. C. Read and Col. Whittlesey. Cf. also the *West. Res. Hist. Soc. Tracts Nos. 12, 42, 53;* the *Amer. Asso. Adv. Sci. Proc.* (1875); and *The Antiquary*, ii. 15. Those in the Upper Minnesota Valley are reported on by T. H. Lewis in the *Amer. Naturalist*, May, 1886, and July, 1887. J. R. Bartlett in his *Personal Narrative* noted some of those along the Mexican boundary, and Froebel (*Seven Years' Travel*, Lond., 1859, p. 519) controverts some of Bartlett's views. Cf. Nadaillac, *Les premiers hommes*, ii.; J. G. Bruff on those in the Sierra Nevada in *Smithson. Rept.*, 1872. A. H. Keane

Out of all this discussion has risen the new science of Anthropology, broad enough in its scope to include not only archæology in its general acceptation, but to sweep into its range of observation various aspects of ethnology and of geology. It is a new science as at present formulated; but under other conditions it is traced from its origin with the ancients in a paper by T. Bendyshe in the *Memoirs of the Anthropological Society of London* (vol. i. 335). Its progress in America is treated by O. T. Mason in the *American Naturalist* (xiv. 348; xv. 616). The most approved methods of modern research are explained in Emil Schmidt's *Anthropologische Methoden; Anleitung zum beobachten und sammeln für Laboratorium und Reise* (Leipzig, 1888). "The methods of archæological investigation are as trustworthy as those of any natural science," says Lubbock (*Scientific Lectures*, 139). Beside the publications of the various Archæological, Anthropological, and Ethnological Societies and Congresses [1] of both hemispheres, we find for Europe a considerable centre of information in the *Materiaux pour l'histoire primitive et naturelle (philosophique) de l'homme*,[2] and for America in the publications of the Smithsonian Institution,[3] in the *Comptes rendus* of the successive Congresses of Américanistes, and in such periodicals as the *American Antiquarian*, the *American Anthropologist*, and the *Folk Lore Journal.*



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reports upon some in North Carolina in the *Journal Anthropological Inst.* (London), xii. 281. C. C. Jones in his *Southern Indians* (1873) covers the subject. Some in Brazil are noted in *Ibid.*, Apr., 1873.

[1] The first session of the International Congress of Prehistoric [Anthropology and] Archæology was held at Neuchâtel, and its proceedings were printed in the *Materiaux pour l'histoire de l'homme.* The second session was at Paris; the third at Norwich, England; the fourth at Copenhagen; and there have been others of later years. Cf. A. de Quatrefages' *Rapport sur le progrès de l'anthropologie* (Paris, 1868). Quatrefages himself is one of the most distinguished of the French school, and deserves as much as any to rank as the founder of the present French school of anthropologists. Cf. his *Hommes fossiles et hommes sauvages* (1884). The English reader can most easily get possessed of his view, conservative in some respects, in Eliza A. Youman's English version of his most popular book, *Nat. Hist. of Man* (N. Y., 1875).

[2] Founded in Paris in 1864 by Gabriel de Mortillet, and edited after vol. v. by Eugène Trutat and Emile Cartailhac.

[3] Cf. C. Rau's *Articles on anthropol. subjects contributed to the Annual Repts. of the Smithson. Inst., 1863-1877* (Smiths. Inst., no. 440; Washington, 1882). The *Smithson. Rept.*, 1880 (Washington, 1881), also contains a bibliography of anthropology by O. T. Mason. A considerable list of books is prefixed to Dr. Gustav Brühl's *Culturvölker des alten Amerika*, which is a collection of tracts published at different times (1875-1887) at N. Y., Cincinnati, and St Louis.

The broad subject of prehistoric archæology is covered in a paper by Lubbock, which is included in his *Scientific Lectures* (Lond., 1879);[1] in H. M. Westropp's *Prehistoric Phases, or Introductory Essays on Prehistoric Archæology* (Lond., 1872); in Stevens's *Flint Chips* (1870); by Dr. Brinton in the *Iconographic Encyclopædia*, vol. ii.; and more popularly in Charles F. Keary's *Dawn of History, an introd. to prehistoric study* (N. Y., 1879), and in Davenport Adams's *Beneath the Surface, or the Underground World.*

The French have contributed a corresponding literature in Louis Figuier's *L'Homme primitif* (Paris, 1870);[2] in Zaborowski's *L'homme préhistorique* (Paris, 1878); and in the Marquis de Nadaillac's *Les premiers hommes et les temps préhistoriques* (Paris, 1881), and his *Mœurs et monuments des peuples préhistoriques* (Paris, 1888), not to mention others.[3]

The principal comprehensive works covering the prehistoric period in North America, are J. T. Short's *North Americans of Antiquity* (N. Y., 1879, and later); the *L'Amérique préhistorique* of Nadaillac (Paris, 1883);[4] Foster's *Prehistoric Races of the United States* (Chicago, 1873; 6th ed., 1887); and the compact popular *Ancient America* (N. Y., 1871) of John D. Baldwin. Beside Bancroft's *Native Races*, there are various treatises of confined nominal scope, but covering in some degree the whole North American field, which are noted in other pages.[5]

The purely ethnological aspects of the American side of the subject are summarily surveyed in A. H. Keane's "Ethnology of America," appended to Stanford's *Compendium of Geography, Cent. America*, etc. (London, 2d ed., 1882), and there are papers on Ethnographical Collections in the *Smithsonian Report* (1862).[6] The great repository of material, however, is in the *Contributions to North American Ethnology*, being a section of Major Powell's *Survey of the Rocky Mountain Region*, and in the *Annual Reports* of the Bureau of Ethnology since 1879, made under Major Powell's directions, and in the *Reports of the Peabody Museum.*[7]

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[1] He had surveyed the condition of the science in 1867 in his introduction to Nilsson's *Stone Age, — Primitive inhabitants of Scandinavia.* Cf. also *Smithsonian Report*, 1862.

[2] Figuier's books are nearly all accessible in English. His *Human Race* and his *World before the Deluge* cover some parts of the subject.

[3] A few minor references: Dawson's *Story of Earth and Man*, ch. 14, 15. Foster's *Prehistoric Races of the U. S.*, ch. 1, 2. Clodd's *Childhood of the World.* Gay's *Pop. Hist. U. S.*, ch. 1. Principal Forbes in the *Edinburgh Review*, July, 1863; Oct., 1870. *London Quarterly Rev.*, Apr., 1870. *Contemp. Rev.*, xi. *Bibliotheca Sacra*, Apr., 1873. *Brit. Q. Rev.*, Ap., Oct., 1863. *Lond. Rev.*, Jan., 1860. *Lippincott's Mag.*, vol. i. *Nat. Q. Rev.*, Mar., 1876. *Lakeside Monthly*, vol. x., etc.

[4] Translated by N. D'Anvers and edited by W. H. Dall, with some radical changes of text (N. Y., 1884). Cf. Lucien Carr in *Science*, 1885, Feb. 27, p. 176. Dall discusses the evidences of the remains of the later prehistoric man in the United States in the *Smithsonian Contributions*, vol. xxii.

[5] A few other references of lesser essays: D. G. Brinton's *Review of the data for the study of the prehistoric chronology of America* (Salem, 1887, — from the *Proc. Amer. Ass. Adv. Sci.*, xxxvi.); his *Recent European Contributions to the study of Amer. Archæology* (Philad. 1883); and his *Prehistoric Archæology* (Philad., 1886). Seth Sweetzer on prehistoric man in the *Am. Antiq. Soc. Proc.*, Apr., 1869, and Haven's *Prehistoric Amer. Civilization* in *Ibid.*, April, 1871. J. L. Onderdonck in *Nat. Quart. Rev.* (April, 1878), xxxvi. 227. Ernest Marceau's "Les anciens peuples de l'Amérique" in the *Revue Canadienne*, n. s., iv. 709. E. S. Morse in *No. Amer. Rev.*, cxxxii. 602, or *Kansas Rev.*, v. 90. H. Gillman's *Ancient men of the Great Lakes* (Detroit, 1877).

The principal work on the South American man is Alcède d'Orbigny's *L'Homme Américaine* (Paris, 1837). There are some local treatises, like Lucien de Rosny's *Les Antilles: étude d'ethnographie et d'archéologie Americaines* (Paris, 1886, — *Am. Soc. d'Ethnographie*, n s., ii.), and papers by Nadaillac and others in the *Materiaux*, etc.

[6] By Theo. Lyman and Hr. de Schlagintweit.

[7] The long article on the Races of America in Cassino's *Standard Nat. Hist.* (Boston, 1885), vol. vi., is based on Friedrich von Hellwald's *Naturgeschichte des Menschen*, but it is widely varied in places under the supervision of Putnam and Carr. Cf. also J. C. Prichard's *Researches into the physical history of mankind* (Lond., 1841), 4th ed., vol. v.. "Oceanic and American nations."

APPENDIX.

I.

BIBLIOGRAPHY OF ABORIGINAL AMERICA.

By the Editor.

THE student will find a general survey of "Les Sources de l'histoire anté-Colombienne du nouveau monde, par Léon de Rosny," in the *Revue Orientale et Américaine* (*Mém. de la soc. d'ethnographie*) *session de 1877* (p. 139). Bancroft in his *Native Races* (v. 136) makes a similar grouping of the classes of sources relating to the primitive Americans.[1] These classes are defined in Daniel G. Brinton's *Review of the data for the study of the prehistoric chronology of America* (Salem, 1887), from the *Proceedings of the Amer. Asso. for the Advancement of Science* (vol. xxxvi.), as conveniently divided into groups pertaining to legendary, monumental, industrial, linguistic, physical, and geological phenomena.

There have been given in the Introduction of the present volume the titles of general bibliographies of American histories, most of which include more or less of the titles pertaining to aboriginal times. It is the purpose of the present brief essay to enumerate, in an approximately chronological order, the titles of some of those and of others which are useful to the archæologist. So far as they are of service to the student of the American languages, an extended list will be found prefixed to Pilling's *Proof-Sheets* (p. xi).

The earliest American bibliography was that of Antonio de Leon, usually called Pinelo, — *Epitome de la Biblioteca oriental y occidental náutica y Geográfica* (Madrid, 1629), — but which is usually found in the edition of Gonzales de Barcía, "Añadido y enmendado nuevamente" (Paris, 1737–1738), in which the American titles, including numerous manuscripts, are given in the second volume.[2]

The *Bibliotheca Hispana Nova* of Nicolás Antonio was first published at Rome in 1672, but in a second edition at Madrid in 1783–88.[3]

Passing by the *Bibliotheca Mexicana* of Eguiara y Eguren,[4] and the early edition of Beristain, we note the new edition of the latter, prepared not by Juan Evangelista Guadalajara, as Brasseur notes,[5] but by another, as the title shows, — *Biblioteca Hispano-Americana Septentrional, ó catalogo y noticia de los Literatos que ó nacidos, ó educados, ó florecientes en la America Septentrional Española, han dado á luz algun escrito ó lo han dexado preparado para la prensa por José Mariano Beristain y Martin de Souza. Segunda edicion, por Fortino Hipólito Vera* (Amecameca, 1883).

Dr. Robertson intimates that the lists of books which writers of the seventeenth century had been in the habit of prefixing to their books as evidence of their industry had come to be regarded as an ostentatious expression of their learning, and with some hesitancy he counted out to the reader his 717 titles; but Clavigero, as elsewhere pointed out,[6] was richer in such resources. Humboldt, in his *Vues*,[7] gives a list of the authors which he cites.

The class of dealers' catalogues — we cite only such as have decided bibliographical value — begins to be conspicuous in Paul Trömel's *Bibliothèque Américaine* (Leipzig, 1861), the best of the German ones, and in Charles Leclerc's *Bibliotheca Americana* (Paris, 1867), much improved in his *Bibliotheca Americana. Histoire, géographie, voyages, archéologie et linguistique des deux Amériques et des îles Philippines* (Paris, 1878), with later supplements, constituting the best of the French catalogues, provided with an excellent index and a linguistic table, rendered necessary by the classified plan of the list.

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[1] Bandelier, in his several essays in the 2d volume of the *Peabody Museum Reports*, speaks of his neglecting such compilations as Bancroft's in order to deal solely with the original sources, and the student will find the references in his foot-notes of those essays very full indications of what he must follow in the study of such sources.

[2] Harrisse, *Bib. Am. Vet.*; Rich, *Bibl. Nova*; Leclerc, nos. 350, 351; Pilling, p. xxviii.

[3] Pilling, p. xii.

[4] See Vol. II. p. 429.

[5] *Bib. Mex. Guat.*, p. 24; Pinart, no. 161. Cf. Icazbalceta on "Las bibliotecas de Eguiara y de Beristain" in *Memorias de la Acadèmia Mèxicana*, i. 353.

[6] Vol. II. p. 430.

[7] Also in Eng. transl., ii. 256.

The list formed by students in this field begins with the *Bibliotheca Americana Vetustissima* of Harrisse (New York, 1866; additions, Paris, 1872), and includes the *Bibliothèque Mexico-Guatémalienne, précédée d'un coup d'œil sur les études américaines dans leurs rapports avec les études classiques, et suivie du tableau, par ordre alphabétique, des ouvrages de linguistique Américaine contenus dans le même volume* (Paris, 1871) of the Abbé Brasseur de Bourbourg, who at that time had been twenty-five years engaged in the studies and travels which led to the gathering of his collection. The library, almost entire, was later joined to that of Alphonse L. Pinart, and was included in the latter's *Catalogue de livres rares et précieux, manuscrits et imprimés* (Paris, 1883).

In 1866, Icazbalceta published at Mexico his *Apuntes para un Catálogo de Escritores en lenguas indígenas de América*,[1] but of his great bibliographical work only one volume has as yet appeared: *Bibliografía Americana del Siglo xvi. Primera parte. Catálogo razonado de libros impresos en México de 1539 à 1600, con biografías de autores y otras ilustraciones, precedido de una noticia acerca de la introducción de la imprenta en México* (México, 1886).

Bandelier has embodied some of the results of his study in his "Notes on the Bibliography of Yucatan and Central America," in the *Amer. Antiq. Soc. Proc.*, n. s., i. pp. 82–118.

The catalogues of collections having special reference to aboriginal America are the following: —

Catalogue de la Bibliothèque de José Maria Andrade, 7,000 pièces et volumes, ayant rapport au Méxique ou imprimés dans ce pays (Leipzig, 1869).[2]

Bibliotheca Mejicana: Books and manuscripts almost wholly relating to the history and literature of North and South America, particularly Mexico (London, 1869). This collection was formed by Augustin Fischer, chaplain to the Emperor Maximilian; but there were added to the catalogue some titles from the collection of Dr. C. H. Berendt.

Catalogue of the library of E. G. Squier, edited by Joseph Sabin (N. Y., 1876).

Bibliotheca Mexicana, or A Catalogue of the library of the rare books and important MSS. relating to Mexico and other parts of Spanish America, formed by the late Señor Don José Fernando Ramirez (London, 1880). This catalogue was edited by the Abbé Fischer.[3]

The most useful guides to the literature of aboriginal America, however, are some compiled in this country. First, the comprehensive though not yet complete bibliography, Joseph Sabin's *Dictionary of books relating to America*, now being continued since Sabin's death, and with much skill, by Wilberforce Eames. Second, the voluminous *Proofsheets of a Bibliography of the languages of the North American Indians* (Washington, 1885), prepared by James Constantine Pilling, tentatively, in a large quarto volume, distributed only to collaborators; and out of which, with emendations and additions, he is now publishing special sections of it, of which have already appeared those relating to the Eskimo and Siouan tongues. His enumeration so much exceeds the range of purely linguistic monographs that the treatises become in effect general bibliographies of aboriginal America.

Third, *An Essay towards an Indian bibliography, being a Catalogue of books relating to the history, antiquities, languages, customs, religion, wars, literature and origin of the American Indians, in the library of Thos. W. Field, with bibliographical and historical notes and synopses of the contents of some of the works least known* (N. Y., 1873). The sale of Mr. Field's library took place in New York, May, 1875, from a *Catalogue* not so elaborate, but still of use. These books are not so accurately compiled as to be wholly trustworthy as final resorts.

Finally, the list prefixed to Bancroft's *Native Races*, vol. i., and the references of his foot-notes, throughout his five volumes (condensed often in Short's *North Americans of Antiquity*), are on the whole the most serviceable aids to the general student, but unfortunately the index of the set is of no use in searching for bibliographical detail.

The reader will remember that the bibliographies of sectional or partial import in the field of American archæology are referred to elsewhere in the present volume.

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[1] Cf. Brinton's *Aborig. Amer. Authors*, Philad., 1883.

[2] See Vol. II. p. 430.

[3] Pilling, p. xxxi.

II.

THE COMPREHENSIVE TREATISES ON AMERICAN ANTIQUITIES.

By the Editor.

AT the time when Bancroft published his *Native Races* (1875), he referred to John D. Baldwin's *Ancient America* (N. Y., 1871) as the only preceding, comprehensive book on America before the Spaniards.[1] It still remains a convenient book of small compass; but its absence of references to sources precludes its usefulness for purposes of study, and it is not altogether abreast of the latest views. To the popular element a moderate share of the indexical character, rendering the book passably serviceable to the average reader, has been added in the somewhat larger *North Americans of Antiquity, their origin, migrations, and type of civilization considered, by John T. Short* (N. Y., 1880, — somewhat improved in later editions), though it will be observed that the Peruvian and other South American antiquities have not come within his plan. The latest of these comprehensive books is the Marquis de Nadaillac's (Jean F. A. du Pouget's) *L'Amérique préhistorique* (Paris, 1883), which in an English version by N. D'Anvers was published with the author's sanction in London in 1882. With revision and some modifications by W. H. Dall, which have not met the author's sanction, it was republished as *Prehistoric America* (N. Y., 1884). It is a work of more theoretical tendency than the student wishes to find at the opening stage of his inquiry.

But as a compend of every department of archæological knowledge up to about fifteen years ago no advance has yet been made upon Bancroft's *Native Races* as indicative of every channel of investigation which the student can pursue. Upon the monuments of the moundbuilders (iv. ch. 13) and the antiquities of Peru (iv. ch. 14) the treatment is condensed and without references, as occupying a field beyond his primary purpose of covering the Pacific slope of North America and the immediately adjacent regions. Mention is made elsewhere of Bancroft's methods of compilation, and it may suffice to say that in the five volumes of his *Native Races* he has drawn and condensed his matter from the writings of about 1200 writers, whose titles he gives in a preliminary list.[2] The method of arranging the departments of the work is perhaps too far geographical to be always satisfactory to the special student,[3] and he seems to be aware of it (for instance, i. ch. 2); but it may be questioned if, while writing with, or engrafting upon, an encyclopædic system, what might pass for a continuous narrative, any more scientific plan would have been more successful. Bancroft's opinions are not always as satisfactory as his material. The student who uses the *Native Races* for its groups and references will accordingly find a complemental service in Sir Daniel Wilson's *Prehistoric Man* (London, 1876), in which the Toronto professor conducts his "researches into the origin of civilization in the old and the new world," by primarily treating of the early American man, as the readiest way of understanding early man in Europe. His system is to connect man's development topically in the directions induced by his habits, industries, dwellings, art, records, migrations, and physical characterizations.

Another and older book, in some respects embodying like purposes, and though produced at a time when archæological studies were much less advanced than at present, is Alexander W. Bradford's *American Antiquities and researches into the origin and history of the red race* (N. Y., 1841).[4] The first section of the book is strictly a record of results; but in the final portion the author indulges more in speculative inquiry. Even in this he has not transcended the bounds of legitimate hypothesis, though some of his postulates will hardly be accepted nowadays, as when he contends that the red Indians are the degraded descendants of the people who were connected with the so-called civilization of Central America.[5]

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[1] A school book, Marcius Willson's *Amer. History* (N. Y., 1847), went much farther than any book of its class, or even of the usual popular histories, in the matter of American antiquities, giving a good many plans and cuts of ruins.

[2] For bibliog. detail regarding the *Nat. Races*, see Pilling's *Proof Sheets*, p. 9. Reviews of the work are noted in *Poole's Index*, p. 956.

[3] Cf., for instance, Dall's strictures on the tribes of the N. W. in *Contrib. to Amer. Ethnol.*, i. p. 8.

[4] Sabin, ii. 7233; Field, no. 169.

[5] Bare mention may be made of a few other books of a general scope: Jean Benoit Scherer's *Recherches historiques et géographiques sur le nouveau monde* (Paris, 1777); D. B. Warden's *Recherches sur les Antiquités de l'Am. Sept.* (Paris, 1827) in *Recueil de Voyages, publié par la Soc. Géog.* (Paris, 1825, ii. 372; cf. Dupaix, ii.); Ira Hill's *Antiquities of Amer. Explained* (Hagerstown, 1831); Louis Faliès' *Etudes historiques et philosophiques sur les civilisations européenne, romaine, grecque, des populations primitives de l'Amérique septentrionale, les Chiapas, Palenqué des Nuhuas ancêtres des Toltèques, civilisation Yucatèque, Zapotèques, Mixtèques, royaume du Michoacan, populations du Nord-Ouest, du Nord et de l'Est, bassin du Mississipi, civilisation Toltèque, Aztèque, Amérique du centre, Péruvienne, domination des Incas, royaume de Quito, Océanie* (Paris, 1872–74); Frederick Larkin's *Ancient man in America. Including works in western New York, and portions of other states, together with structures in Central America* (New York, 1880), — a book, however, hardly to be commended by archæologists; and Charles Francis Keary's *Dawn of History, an introduction to prehistoric study* (N. Y., 1887).

The periodical literature of a comprehensive sort is not so extensive as treatments of special aspects; but the student will find Poole's *Index* and Rhee's *Catalogue and Index of the Smithsonian publications* serviceable.

III.

BIBLIOGRAPHICAL NOTES ON THE INDUSTRIES AND TRADE OF THE AMERICAN ABORIGINES.

By the Editor.

WHILE we have a moderate list of works on the general subject of prehistoric art and industries,[1] we lack any comprehensive survey of the subject as respects the American continent, and must depend on sectional and local treatment. Humboldt in the introduction to his *Atlas* of his *Essai politique* (Paris, 1813) was among the earliest to grasp the material which illustrates the origin and first progress of the arts in America. The arts of the southern regions and western coasts of North America are best followed in those portions of the chapters on the Wild Tribes, devoted to the subject, which make up the first volume of Bancroft's *Native Races*,[2] and for Mexican and Maya productions some chapters (ch. 15, 24) in the second volume. Prescott's treatment of the more advanced peoples of this region is scant (*Mexico*, i., introd., ch. 5). The art in stone of the Pueblo Indians is beautifully illustrated in Putnam's portion of Wheeler's *Report* of his survey, and comparison may be made with Hayden's *Annual Rept.* (1876) of the U. S. Geol. and Geographical Survey. The work of Putnam and his collaborators in the archæological volume (vii.) of Wheeler's *Survey* is probably the most complete account of the implements, ornaments and utensils of any one people (those of Southern California) yet produced; and its illustrations have not been surpassed. Passing north, we shall get some help from E. L. Berthoud's paper on the "Prehistoric human art from Wyoming and Colorado," in his "Journal of a reconnaissance in Creek Valley, Col.," published by the Colorado Acad. of Nat. Sciences (*Proceedings*, 1872. p. 46). In the *Pacific Rail Road Reports* (vol. iii. in 1856) there is a paper by Thomas Ewbank in "Illustrations of Indian antiquities and arts." S. S. Haldeman has described the relics of human industry found in a rock shelter in southeastern Pennsylvania (*Compte Rendu*, *Cong. des Amér.*, Luxembourg, ii. 319; and *Transactions Amer. Philos. Soc.*, 1878). The best of all the more comprehensive monographs is Charles C. Abbott's *Primitive industry: or illustrations of the handiwork, in stone, bone and clay, of the native races of the Northern Atlantic seaboard of America* (Salem, 1881). Morgan's *League of the Iroquois* touches in some measure of the arts of that confederacy, his earliest study being in the *Fifth Report of the Regents of the State of New York* (1852).

For the Canada regions, the *Annual Reports of the Canadian Institute*, appended to the *Reports* of the Minister of Education, Ontario, contain accounts of the discovery of objects of stone, horn, and shell. (See particularly the sessions of 1886–87.) Dawson in his *Fossil men* (ch. 6) considers what he accounts the lost arts of the primitive races of North America. On the other hand, Professor Leidy found still in use among the present Shoshones split pebbles resembling the rudest stone implements of the palæolithic period (*U. S. Geological Survey*, 1872, p. 652).

Many archæologists have remarked on the uniform character of many prehistoric implements, wherever found, as precluding their being held as ethnical evidences. The system of quarrying[3] for flint best fitted for the tool-maker's art has been observed by Wilson (*Prehistoric man*, i. 68) both in the old and new world, and in his third chapter (vol. i.) we have a treatise on the ancient stone-worker's art.[4]

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[1] It is not necessary to enumerate many titles, but reference may be made to the summary of prehistoric conditions in Zerffi's *Historical development of art*. It may be worth while to glance at A. Daux's *Etudes préhistoriques. L'industrie humaine: ses origines, ses premiers essais et ses légendes depuis les premiers temps jusqu'au déluge* (Paris, 1877); Dawson's *Fossil men*, ch. 5; Joly's *Man before Metals*; Nadaillac's *Les Premiers Hommes*, ii. ch. 11; Dabry de Thiersant's *Origine des indiens du Nouveau Monde* (Paris, 1883); and Brühl's *Culturvölker alt-Amerika's*, ch. 14, 16.

[2] Cf., particularly for California, Putnam's *Report* in Wheeler's Survey.

[3] There is some question if the early Americans ever carried on the heavier parts of the quarrying arts, as for building-stones. Cf. Morgan's *Houses and House Life*, 274. They did quarry soap-stone (Elmer R. Reynolds, Schumacher and Putnam, in *Peabody Mus. Repts.*, xii.) and mica (*Smithsonian Report*, 1879, by W. Gesner; C. D. Smith in *Ibid.* 1876; Dr. Brinton in *Proc. Numism. and Antiq. Soc. of Philad.*, 1878, p. 18). That they quarried pipe-stone is also well known, and the famous red pipe-stone quarry, lying between the Missouri and Minnesota rivers, was under the protection of the Great Spirit, so that tribes at war with one another are said to have buried their hatchets as they approached it. Wilson, in the last chapter of the first volume of his *Prehistoric man*, examines this pipe-carving and tells the story of this famous quarry. He refers to the tobacco mortars of the Peruvians in which they ground the dry leaf; and to the pipes of the mounds in which it was smoked. Cf. J. F. Nadaillac's *Les pipes et le tabac* (Paris, 1885), taken from the *Materiaux pour l'histoire primitive de l'homme* (ii. for 1885); and Lucien de Rosny on "Le tabac et ses accessoires parmi les indigènes de l'Amérique," in *Mémoires sur l'Archéologie Américaine*, 1865, of the Soc. d'Ethnographie.

[4] It should be remembered that the recognition of the Flint-folk as occupying a distinct stage of development is

Treating the subject topically, we find the late Charles Rau making some special studies of the implements used in native agriculture[1] in the *Smithsonian Reports* for 1863, 1868, and 1869.[2] The agriculture of the Aztecs and Mayas is treated in Max Steffen's *Die Landwirtschaft bei den altamerikanischen Kulturvölkern* (Leipzig, 1883).[3]

The working of flint or obsidian into arrow-points or cutting implements is a process by pressure that has not been wholly lost. Old workshops, or the chips of them, have been discovered, and they are found in numerous localities (Wilson's *Prehistoric Man*, i. 75, 79; Abbott's *Primitive Industry*, and Putnam in the *Bull. Essex Institute*), but Powell in his *Report of Explorations of the Colorado of the West* (1873) does not, as Wilson says he does, describe the present ways.[4]

Wilson (*Prehistoric Man*, i. ch. 4 and 7) in an essay on the bone and ivory workers substitutes for the corresponding words usually employed in classifying stone implements the terms palæotechnic and neotechnic, as indicating periods of progress, in order that the art of making tools in horn, bone, shell, and ivory might have a better recognition, as of equal importance with that of making such in stone. Separate treatises are few. Morgan has a paper on the bone implements of the Arickarees in the *21st Rept. of the Regents of the University of the State of N. Y.* (1871), and Rau's monograph on *Prehistoric fishing in Europe and North America*, one of the *Smithsonian Contributions* (1884), involves the making of fish-hooks of bone. See also Putnam in the *Peabody Museum Reports*, and in *Wheeler's Survey*, vol. vii.; Wyman's contributions on the shell heaps, and the *Journal of the Cincinnati Soc. of Nat. Hist.* for such as have been found in the ash-pits of Madisonville. On shell-work there is a section in Foster's *Prehistoric Races* (p. 234); a paper by W. H. Holmes in the *Second Rept. of the Bureau of Ethnology* (p. 179); and one on American shell-work and its affinities by Miss Buckland in the *Journal Anthropol. Inst.*, xvi. 155.

From the primitive materials of stone, bone, horn, or shell, we pass to metals; but as Wilson (i. p. 174) says, "if metal could be found capable of being wrought and fashioned without smelting or moulding, its use was perfectly compatible with the simple arts of the stone period, as a mere malleable stone;" and to the present day, he adds, the rude American race has no knowledge of working metal, except by pounding or grinding it cold.[5] The story which Brereton tells in his account of Gosnold's visit (1602) to New England, about the finding of abundant metal implements in use among the natives, is questioned (Baldwin's *Ancient America*, p. 62). We have the evidences of the early mining[6] of copper extending for over a hundred miles along the southern shores of Lake Superior and on Isle Royale, in the abandoned trenches and tools first discovered in 1847; and in one case there was found a mass of native copper (ten feet by three and two, and weighing over six tons) which had been elevated on a wooden frame prior to removal, and was discovered in this condition.[7] There are also indications that the manufacture of copper tools was carried on in the neighborhood of

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a modern notion. For a century and a half after European museums began to gather stone implements they were reputed relics of Celtic art. Treatment of American art necessarily makes part of the works of Squier and Davis; Schoolcraft; Foster's *Prehistoric Races*, ch. 6; Lubbock's *Prehistoric Times;* Joly's *Man before Metals.* Cf. references in *Poole's Index* under "Stone Age" and "Stone Implements."

[1] Cf. S. D. Peet in *Amer. Antiquarian*, vii. 15.

[2] Rau is an authority on stone implements. See further his paper on stone implements in the *Smithsonian Rept.*, 1872; one on drilling stone without metal in *Ibid.* 1868; and one on cup-shaped and other lapidarian sculpture in the *Contributions to No. Amer. Ethnology*, vol. v. (Powell's *Rocky Mountain Survey*, 1882). These carved, cup-like cavities in rocks are also discussed in Wilson's *Prehistoric Man*, vol. i. ch. 3, where it is held that they were formed by the grinding process in shaping the rounded end of tools. H. W. Henshaw in the *Amer. Jour. of Archæology* (i. 105) discusses another enigma in the stone relics, called sinkers or plummets. Foster (*Prehist. Races*, 230) believes they were used as weights to keep the thread taut in weaving.

[3] Cf. also Stevens's *Flint Chips*, 292, and Charnay, Eng. transl., p. 70.

[4] Cf. G. Crook "on the Indian method of making arrow-heads" in the *Smithsonian Rept.*, 1871, and C. C. Jones, Jr., on "the primitive manufacture of spear and arrow-points along the Savannah River" in *Ibid.* 1879. A paper by Sellers in a later report is of importance. Cf. Stevens' *Flint Chips*, pp. 75–85, and Schumacher in *Smithsonian Report*, 1873.

True flint was not often, if ever, used in America, but rather chert or hornstone, and quartz, though implements are found of jasper, chalcedony, obsidian, quartzite, and argillite. Cf. Rau on the stock in trade of an aboriginal lapidary in *Smithsonian Rept.* (1877); and Rosny's "Recherches sur les masques, le jade et l'industrie lapidaire chez les indigènes de l'Amérique" in *Arch. de la Soc. Amér. de France*, n. s., vol. i. Jade or jadite implements and ornaments have been found in Central America and Mexico, and others resembling them in northwestern America; but it is not yet clear that the unworked material, such as is used in the middle America specimens, is found in America *in situ.* Upon the solution of this last problem will depend the value of these implements when found in America as bearing upon questions of Asiatic intercourse. Cf. Dr. A. B. Meyer in the *Amer. Anthropologist* (vol. i., July, 1888, p. 231), and F. W. Putnam in the *Mass. Hist. Soc. Proc.*, Jan., 1886, and in the *Proc. Amer. Antiq. Society.*

[5] Wilson (*Prehistoric Man*, i. 200) points out that philology confirms it, the word for copper meaning "yellow stone." On the question of their melting metal see letter of Prof. F. W. Putnam in *Kansas City Rev. of Science*, Dec. 1881; Wilson (i. 361); Foster's *Prehistoric Races*, 293.

[6] Wilson (i. 209, 227) thinks the arboreal and other evidences carry the time when these mines were worked back, at latest, to a period corresponding to Europe's mediæval era. The earliest modern references to copper in this region are in Sagard in 1632 (Haven, p. 127) and in the *Jesuit Relation* of Allouez in 1666–67. Alexander Henry (*Travels and Adventures in Canada*) in 1765 is the earliest English explorer to mention it. Wilson holds to the belief that the present race of red Indians had no knowledge of these mining practices, but that they knew simply chance masses or exposed lodes. Wilson (i. 362) also gives reasons for supposing that the Lake Superior mines may have been a common meeting ground for all races of the continent.

[7] Wilson, i. 205. MacLean's *Moundbuilders*, ch. 6, gives a section of the shaft as when discovered.

the mines (Wilson, i. 213): and chemical tests have shown that a popular belief in the tempering of metal by these early peoples is without foundation.[1]

It seems to be a fact that while in the use of metals an intermediate stage of pure copper, as coming between the use of bone and stone and the use of alloyed metals, was not until comparatively recently suspected in Great Britain, the "peculiar interest attaches to the metallurgy of the new world that there all the earlier stages are clearly defined: the pure native metal wrought by the hammer without the aid of fire; the melted and moulded copper; the alloyed bronze; and the smelting, soldering, graving, and other processes resulting from accumulating experience and matured skill" (Wilson, i. 230). It is in the regions extending from Mexico to Peru that the art of alloying introduces us to the American bronze age. Columbus in his fourth voyage found in a vessel which had come alongside from Yucatan crucibles to melt copper, as Herrera tells us; and Humboldt was among the earliest to discover tools alloyed of copper and tin, and many such alloys have since been recognized among Peruvian bronzes (Wilson, i. 239). In Mexico, metallurgic arts were carried perhaps even farther in casting and engraving, and not only the results but the evidences of their mining places have remained to our day (*Ibid.* i. 248). It seems evident, however, that experimenting with them had not carried them so near the perfect combination for tool-making (one part tin to nine parts copper) as the bronze people of Europe had reached, though they fell considerably short of the exact standard (*Ibid.* i. 254). Doubt has sometimes been expressed of Mexican mining for copper, as by Frederick von Hellwald (*Compte Rendu, Cong. des Américanistes*, 1877, i. 51); but Rau indicated the references[2] to Short (p. 94), which forcibly led him to the conclusion that the Mexicans mined copper to turn into tools.[3] Among the Mayas, Nadaillac (p. 260) contends that only copper and gold were in use. Bancroft (ii. 749) thinks the use of copper doubtful, and if used, that it must have been got from the north. He cites the evidences of the use of gold. William H. Holmes discusses *The use of gold and other metals among the ancient inhabitants of Chiriqui, Isthmus of Darien* (Washington, 1887). As to iron, that found in the Ohio mounds, only of late years, has been proved to be meteoric iron by Professor Putnam (*Amer. Antiq. Soc. Proc.*, Apr., 1883). Bancroft (i. 164) says iron was in use among the British Columbian tribes before contact with the whites, but it was probably derived through some indirect means from the whites. Though iron ore abounds in Peru, and the character of the Peruvian stone-cutting would seem to indicate its use, and though there is a native word for it, no iron implements have been found.[4] There is not much recorded of the use of silver. It has been found by Putnam in the mounds in thin sheets, used as plating for other metals.[5] He has also found native silver in masses, and in one case a small bit of hammered gold.

Wilson, in 1876, while regretting the dispersion of the William Bullock collection of pottery, the destruction of that formed by Stephens and Catherwood, and the transference to an English museum of most of the specimens gathered by Squier and Davis, lamented that no American collection[1] had been yet formed adequate to the requirements of the students of American archæology and ethnology. Since that date, however, the collections in the National Museum (Smithsonian Institution) at Washington and in the Peabody Museum at Cambridge have largely grown; and especially for the fictile art and work in stone of Spanish North America the Museo Nacional in Mexico has assumed importance. The collection in the possession of the American Philosophical Society in Philadelphia,[2] since transferred to the Philadelphia Academy, is also of value for the study of the pottery of middle America.

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[1] Of the Lake Superior mines, the earliest intelligent account we have is in C. T. Jackson's *Geological Report to the U. S. Gov't*, 1849; but a more extended and connected account appeared the next year in the *Report on the Geology of Lake Superior* (Washington, 1850), by J. W. Foster and J. D. Whitney, which is substantially reproduced in Foster's *Prehistoric Races* (1873), ch. 7. Meanwhile, Col. Charles Whittlesey had published in vol. xiii. of the *Smithsonian Contributions* his *Ancient Mining on the shores of Lake Superior* (Washington, 1863, with a map), which is on the whole the best account, to be supplemented by his paper in the *Memoirs* of the Boston Society of Natural History. Jacob Houghton supplied a description of the "ancient copper mines of Lake Superior" to Swineford's *History and Review of the mineral resources of Lake Superior* (Marquette, 1876). Cf. also *Annals of Science* (Cleveland), i. for 1852; Dawson's *Fossil Men*, 61; Baldwin's *Ancient America*, 42; Wilson's *Prehistoric Man*, i. 204; Dr. Harvey Read in the *Dist. Hist. Soc. Report*, ii. (1878); Joseph Henry in the *Smithsonian Reports* (1861; also in 1862); and Short, p. 89, with references.

On the mines at Isle Royale, see Henry Gillman's "Ancient works at Isle Royale" in *Appleton's Journal*, Aug. 9, 1873; *Smithsonian Repts.*, 1873, 1874, by A. C. Davis; the *Proceedings* of the Amer. Asso. for the Advancement of Science, 1875; and Professor Winchell in *Popular Science Monthly*, Sept., 1881.

See further, on the copper implements of these ancient workers: Abbott's *Primitive Industry*, ch. 28; Foster's *Prehistoric Races*, 251; P. R. Hoy's *How and by whom were the copper implements made?* (Racine, 1886, in *Wisconsin Acad. of Science*, iv. 132); J. D. Butler's address on "Prehistoric Wisconsin" in the *Wisconsin Hist. Coll.*, vol. vii. (see also vol. viii.), with his "Copper Age in Wisconsin" in the *Proc. of the Amer. Antiquarian Society*, April, 1877, and his paper on copper tools in the *Wisconsin Acad. of Science*, iii. 99; H. W. Haynes on "Copper implements of America" in *Proc. Amer. Antiq. Soc.*, Oct., 1884, p. 335; Putnam on the copper objects of North and South America preserved in the Peabody Museum (*Reports*, xv. 83); Read and Whittlesey in the *Final Report, Ohio Board Cent. Managers*, 1877, ch. 3; and *Poole's Index*, p. 300. Reynolds has recently in the *Journal of the Anthropol. Soc.* (Washington) claimed copper mining for the modern Indians.

[2] Clavigero (Philad., Eng. transl., i. 20); Prescott, i. 138; Folsom's ed. of Cortes' letters, 412; Lockhart's transl. of Bernal Diaz (Lond., 1844, i. 36).

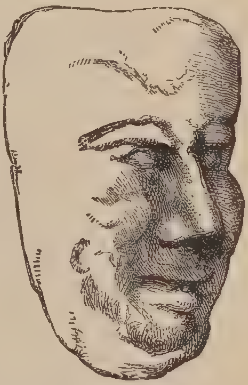
[3] Cf. on copper implements from Mexico: P. J. J. Valentini's *Mexican copper tools: the use of copper by the Mexicans before the Conquest; and The Katunes of Maya history, a chapter in the early history of Central America. From the German, by S. Salisbury, jr.* (Worcester, 1880), from the *Amer. Antiq. Soc. Proc.*, Apr. 30, 1879; F. W. Putnam in *Ibid.*, n. s., ii. 235 (Oct. 21, 1882); Charnay, Eng. transl., p. 70; H. L. Reynolds, Jr., on the "Metal art of ancient Mexico" in *Popular Science Monthly*, Aug., 1887 (vol. xxxi., p. 519).

[4] Cf. St. John Vincent Day's *Prehistoric use of iron and steel: with observations* (London, 1877). This book grew out of papers printed in the *Proc. Philosoph. Soc. of Glasgow* (1871–75).

[5] Cf. Dr. Washington Matthews on the "Navajo silversmiths" in the *2d Rept. Bureau of Ethnol.* (Washington, 1883), p. 167.

Rau has supplied a leading paper on American pottery in the *Smithsonian Report*, 1866; and E. A. Barber has touched the subject in papers at the Copenhagen, Luxembourg, and Madrid meetings of the Congrès des Américanistes, and in the *American Antiquarian* (viii. 76).[3] W. H. Holmes has a paper on the origin and development of form and of ornament in ceramic art in the *Fourth Report, Bureau of Ethnology*, p. 437.

For local characters there are various monographs.[4]



MEXICAN CLAY MASK.*

There is no satisfactory evidence that the potter's wheel was known to any American tribe; but Wilson, in his chapter on ceramic art (*Prehistoric Man*, ii. ch. 16), feels convinced that the early potter employed some sort of mechanical process, giving a revolving motion to his clay.

Modelling in clay for other purposes than the making of vessels is also considered in this same seventeenth chapter of Wilson, and the subject runs, as respects masks, figurines, and general ornamentation, into the wide range of aboriginal art, which necessarily makes part of all comprehensive histories of art. W. H. Dall has a paper on Indian masks in the *Third Report, Bureau of Ethnology*, p. 73. The subject is further treated by Wilson in a paper on "The artistic faculty in the aboriginal races," in the *Proceedings* (iii., 2d part, 67, 119) of the Royal Society of Canada, and again in a general way by Nadaillac on *L'art préhistorique en Amérique* (Paris, 1883), taken from the *Revue des deux Mondes*, Nov. 1, 1883.[5]

As regards the textile art in prehistoric times, see for a general view W. H. Holmes in the *American Antiquarian*, viii. 261; and the same archæologist has treated the subject on the evidences of the impression of textures as preserved in pottery, in the *Third Rept. Bur. of Ethnology*, p. 393. Cf. Sellers in *Popular Science Journal*, and Wyman in *Peabody Museum Reports*.

J. W. Foster first made (1838) the discovery of relics of textile fabrics of the moundbuilders; but he did not announce his discovery till at the Albany meeting (1851) of the American Association for the Advancement of Science (*Transactions*, 1852, vol. vi. p. 375). He tells the story in his *Prehistoric Races*, p. 222, and figures the implements, found in the mounds, supposed to be employed in the making their cloth with warp and woof. Putnam has since made similar discoveries (*Peabody Museum Reports*). The subject is also treated in the *Proceedings* of the Davenport Academy and of the American Association for the Advancement of Science. The fabrics were preserved by being placed in contact with copper implements.

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[1] The chief European collections are in the British Museum, the Society of Antiquaries of Scotland, the Louvre, and at Copenhagen, Vienna, Brussels, not to name others; and among private ones, the Christy and Evans collections in England and the Unde in Heidelberg.

[2] *Transactions*, n. s., iii. 510.

[3] Cf. Lucien de Rosny's "Introduction à une histoire de la céramique chez les indiens du nouveau monde" in the *Archives de la Soc. Amér. de France*, n. s., vol. i., and Stevens' *Flint Chips*, 241. Further references: Wilson's *Prehist. Man*, ii. ch. 17; Catlin's *N. A. Indians*, ch. 16; F. V. Hayden's *Contrib. to the Ethnog. of the Missouri Valley*, 355; A. Demmin's *Hist. de la Céramique* (Paris, 1868–1875); Nadaillac's *Les Premiers Hommes*, and his *L'Amérique préhistorique*, ch. 4.

[4] For the Atlantic coast, papers by Abbott (*American Naturalist*, Ap. 72, etc.), later more comprehensively treated in his *Primitive Industry*, ch. 11; and for the middle Atlantic region, a paper by Francis Jordan, Jr., in the *Amer. Philosoph. Soc. Proc.* (1888, vol. xxv.). For Florida, Schoolcraft in the *New York Hist. Soc. Proc.*, 1846, p. 124. For the moundbuilders, Foster's *Prehistoric Races*, p. 237, and in *Amer. Naturalist*, vii. 94 (Feb., 1873); Nadaillac, ch. 4; and Putnam in *Amer. Nat.*, ix. 321, 393, and *Peabody Mus. Repts.*, viii. For the Mississippi Valley in general, Edw. Evers in *The Contributions to the archæology of Missouri*; W. H. Holmes in the *Fourth Report of the Bureau of Ethnology*, an improvement of a paper in the *Proc. of the Davenport Acad. of Sciences*, vol. iv. Joseph Jones in the *Smithsonian Contrib.*, xxii., and Putnam in the *Peabody Mus. Repts.*, have described the pottery of Tennessee. The *Pacific R. R. Repts.* yield us something; and Putnam (*Reports*) was the first to describe the Missouri pottery. J. H. Devereux treats the pottery of Arkansas in the *Smithsonian Rept.*, 1872. On the Pueblo pottery, see papers of W. H. Holmes and F. H. Cushing in the *Fourth Rept. Bur. of Ethn.* (pp. 257, 743); and James Stevenson's illustrated catalogue in the *Third Rept.*, p. 511. F. W. Putnam (*Amer. Art Review*, Feb., 1881), supplementing his work in vol. vii. of Wheeler's Survey, thinks that the present Pueblo Indians make an inferior ware to their ancestors' productions. The pottery of the cliff-dwellers is described in Hayden's *Annual Rept.* (1876). Paul Schumacher explains the method of manufacturing pottery and basket-work among the Indians of Southern California in the *Peabody Museum Rept.*, xii. 521. O. T. Mason's papers in recent *Smithsonian Reports* and in the *Amer. Naturalist* are among the best investigations in this direction.

[5] For some special phases, see S. Blondel's *Recherches sur les bijoux des peuples primitifs . . . Mêxicains et Péruviens* (Paris, 1876); F. W. Putnam's *Convention-*

* After a cut in Wilson's *Prehistoric Man*, ii. p. 33, of an example in the collections of the American Philosophical Society, in a totally different style from the usual Mexican terra-cottas; and Wilson remarks of it that one will look in vain in it for the Indian physiognomy. Tyler, *Anahuac*, 230, considers it a forgery.

The Indians of New Mexico were found by the Spaniards in possession of the art of weaving. Cf. Washington Matthews on the Navajo weavers, in the *Third Rept. Bur. of Ethnology*, p. 371, and Bancroft (i. 582), who also records the making of fabrics by the wild tribes of Central America (*Ibid.* i. 766–67). He also notes the references to the textile manufactures of the Nahuas and Mayas (ii. 484, 752). The richest accumulation of graphic data relative to the fabrics of Peru is contained in the great work on the *Necropolis of Ancon*.

Feather-work was an important industry in some parts of the continent. The subject is studied in Ferdinand Denis' *Arte plumaria : Les plumes, leur valeur et leur emploi dans les arts au Méxique, au Pérou, au Brésil et dans les Indes et dans l'Océanie* (Paris, 1875).[1]

Lewis H. Morgan's *Houses and House-life of the American Aborigines* (Washington, 1881) is the completest study of the habitations of the early peoples; but it is written too exclusively in the light of universal communal custom, and this must be borne in mind in using it. The edifices of middle America and Peru have been given a bibliographical apparatus in another part of the present volume; but references may be made to Wilson's *Prehistoric Man* (ii. ch. 16), Viollet le Duc's *Habitations of Man*, translated by R. Bucknall (Boston, 1876), and to Bandelier's *Archæological Tour*, 226, where he quotes as typical the description of a native house in 1583, drawn by Juan Bautista Pomar.

There is no good comprehensive account of American prehistoric trade. The T-shaped pieces of copper in use by the Mexicans came nearest to currency as we understand it, unless it be the wampum of the North American Indians, and the shell money in use on the Pacific coast; but it should be remembered that copper axes and copper plates served such a purpose with some tribes.[2] The Peruvians used weights, but the Mexicans did not. The latter had, however, a system of measures of length.[3] The canoe was a great intermediary in the practice of barter.[4] The Peruvians alone understood the use of sails, and the earliest Spanish navigators on the Pacific were surprised at what they thought were civilized predecessors in those seas when they espied in the distance the large white sails of the Peruvian rafts of burden.[5] The chief source of trade in such conditions was barter, and we know how the Mexican travelling merchants got information that was availed of by the Mexican marauders in their invasions. Bandelier[6] gives us the references on the barter system, the traders, and the currency in that country, and we need to consult Dr. W. Behrnauer's *Essai sur le Commerce dans l'ancien Méxique et en Pérou*, in the *Archives de la Soc. Amér. de France* (n. s., vol. i.).

All the treatises on the mounds of the Ohio Valley derive illustrations of intertribal traffic from the shells of the coast, the copper of Lake Superior, the mica of the Alleghanies, the obsidian of the Rocky Mountains or of Mexico, and the unique figurines which the explorations of the mounds have disclosed. Charles Rau has a paper on this aboriginal trade in North America, published in the *Archiv für Anthropologie* (Braunschweig, 1872, vol. iv.), which was republished in English in the *Smithsonian Report*, 1872, p. 249. Bancroft's references under "Commerce" (v. p. 668) will help the student out in various particulars.

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alism in Ancient American Art (Salem, 1887, from the *Bull. Essex Inst.*, xviii., for 1886); Mexican masks in Stevens' *Flint Chips*, 328; S. D. Peet on "Human faces in aboriginal art," in the *American Antiquarian* (May, 1886, or viii. 133); the description of terra-cotta figures in Herman Strebel's *Alt-Mexico*. A terra-cotta vase in the Museo Nacional is figured in Brasseur's *Popul Vuh* (1861).

It is not known that stringed instruments were ever used, notwithstanding the suggestion of the twanging of the bow-string; but museums often contain specimens of musical pipes used by the aborigines. The opening chapter of J. F. Rowbotham's *Hist. of Music* (London, 1885) gives what evidence we have, with references, as to kinds of music common to the American aborigines, and their fictile wind instruments. Cf. A. J. Hipkins' *Musical instruments, historic, rare, and unique. The selection, introduction, and descriptive notes by A. J. Hipkins; illustrated by William Gibb* (Edinburgh, 1888); H. T. Cresson on Aztec music in the *Proc. Acad. Nat. Sciences* (Philad., 1883); and Wilson's *Prehistoric Man* (ii. 37), with the references in Bancroft's index (v. p. 717).

In Nott and Gliddon's *Indigenous Races of the Earth* (Philad., 1857) there is a section by Francis Pulszky on "Iconographic researches on human races and their art."

[1] Mrs. Zelia Nuttall's essay on some Mexican feather-work preserved in the Imperial Museum at Vienna appeared in the *Archæol. and Ethnolog. Papers of the Peabody Museum*, vol. i. no. 1 (Cambridge, 1888), and here she discusses the question if this is a standard or head-dress, and holds it to have been a head-dress. The contrary view is taken by F. von Hochstetter in his *Ueber Mexicanische Reliquien aus der Zeit Montezuma's* (Vienna, 1884), who supposes it to have been among the presents sent by Cortes in 1519 to Charles V., in the possession of whose nephew it is known to have been in 1596.

[2] Cf. Horatio Hale on *The Origin of Primitive Money* (N. Y., 1886, — from the *Popular Science Monthly*, xxviii. 296); W. B. Weedon's *Indian Money as a factor in New England Civilization* (Baltimore, 1884, — Johns Hopkins (University Studies); Ashbel Woodward's *Wampum* (Albany, 1878); Ernst Ingersoll in the *Amer. Naturalist* (May, 1883); and the cuts of wampum belts in the *Second Rept. Bur. Ethnology* (pp. 242, 244. 246, 248, 252, 254).

[3] Cf. D. G. Brinton's *The lineal measures of the Semi-civilized nations of Mexico and Central America. Read before the American Philosophical Society, Jan. 2, 1885* (Philadelphia, 1885).

[4] Wilson's *Prehistoric Man*, i. ch. 6.

[5] Wilson, i. 168. See *post*, Vol. II. 508, for an old cut of a raft under sail.

[6] *Peabody Mus. Rept.*, ii. 602–8.

IV.

BIBLIOGRAPHICAL NOTES ON AMERICAN LINGUISTICS.

By the Editor.

It cannot be said that the study of American linguistics has advanced to a position wholly satisfactory. It is beset with all the difficulties belonging to a subject that has not been embraced in written records for long periods, and it is open to the hazards of articulation and hearing, acting without entire mutual confidence. And yet we may not dispute Max Müller's belief,[1] that it is the science of language which has given the first comprehensive impulse to the study of mankind.

Out of the twenty distinct sounds which it is said the voice of man can produce,[2] there have been built up from roots and combinations a great diversity of vocabularies. Comparisons of these, as well as of the methods of forming sentences, have been much used in investigations of ethnical relations. Of these opposing methods, neither is sufficiently strong, it is probable, to be pressed without the aid of the other, though the belief of the Bureau of Ethnology at Washington, under the influence of Major Powell, practically discards all tests but the vocabulary, in tracing ethnological relations. It is held that this one test of words satisfies, as to customs, myths, and other ethnological traits, more demands of classifications than any other. Granted that it does, there are questions yet unsolvable by it; and many ethnologists hold that there are still other tests, physiological, for instance,[3] which cannot safely be neglected in settling such complex questions. The favorite claim of the Bureau is that its officers are studying man as a human being, and not as an animal; but it is by no means sure that the physical qualities of man are so disconnected with his mind and soul as to be unnecessary to his interpretation. Even if language be given the chief place in such studies, there is still the doubt if the vocabulary can in all ways be safely followed to the exclusion of the structure of the language; and it is not to be forgotten, as Haven recognized thirty years ago, that "one of the greatest obstacles to a successful and satisfactory comparison of Indian vocabularies is caused by the capricious and ever-varying orthography applied by writers of different nations." This is a chance of error that cannot be eliminated when we have to deal with lists of words made in the past, by persons not to be communicated with, in whom both national and personal peculiarities of ear and vocal organs may exist to perplex. A part of the difficulty is of course removed by trained assistants acting in concert, though in different fields; but the individual sharpness or dulness of ear and purity and obscurity of articulation will still cause diversity of results, — to say nothing of corresponding differences in the persons questioned. There is still the problem, broader than all these divisionary tests, whether language is at all a safe test of race, and on this point there is room for different opinions, as is shown in the discussions of Sayce, Whitney, and others.[4] "Any attempt," says Max Müller, "at squaring the classification of races and tongues must necessarily fail."[5] On the other hand, George Bancroft (Final revision, ii. 90) says that "the aspect of the red men was so uniform that there is no method of grouping them into families but by their languages."

It is the wide margin for error, already indicated, that vitiates much that has already been done in philological comparisons, and the over-eager recognition at all times of what is thought to be the word-shunting of "Grimm's Law" has doubtless been responsible for other confusions.[6]

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[1] *Chips*, ii. 248. Cf. Dabry de Thiersant's *Origine des indiens* (Paris, 1883), p. 187.

[2] It has been a question whether the palæolithic man talked, and it has been asserted and denied, from the character of certain inferior maxillary bones found in caves, that he had the power of articulate speech. Dr. Brinton has recently, from an examination of the lowest stocks of linguistic utterances now known, endeavored to set forth "a somewhat correct conception of what was the character of the rudimentary utterances of the race." Cf. Brinton, *Language of the Palæolithic Man*, Philadelphia, 1888; Mortillet, *La préhistorique Antiquité de l'Homme* (Paris, 1883); H. Steinthal, *Der Ursprung der Sprache* (Berlin, 1888). Horatio Hale, on "The origin of languages and the antiquity of speaking man," in the *Am. Assoc. Adv. Sci. Proc.*, xxxv. 279, cites the views of some physiologists to show that the pre-glacial man could not talk, because there are only rudimentary signs of the presence of important vocal muscles to be discovered in the most ancient jaw-bones which have been found. Rau inferred that the totally diverse character, as he thought, of the American tongues indicated strongly that the earliest man could not articulate (*Contrib. to N. A. Ethnology*, v. 92) For other somewhat wild speculations, see Col. E. Carette's *Etude sur les temps antéhistoriques, La Langage* (Paris, 1878).

[3] Morgan thought he had found a test in his *Systems of consanguinity and affinity of the Human Family* (Washington, 1871).

[4] *Journal Anthropological Inst.*, v. 216.

[5] *Science of Language*, i. 326.

[6] For recognition of it in American philology, see Bancroft, iii. 670, and Short, 471.

Most of the general philological treatises touch more or less intimately the question of language as a test of race,[1] and all of them engage in tracing affinities, each with confidence in a method that others with equal assurance may belittle.[2] Thus Bancroft,[3] reflecting an opinion long prevalent, says that "positive grammatical rules carry with them much more weight than mere word likenesses,"[4] while, on the contrary, Dawson[5] says that "grammar is, after all, only the clothing of language. The science consists in its root-words; and multitudes of root-words are identical in the American languages over vast areas." This last proposition is, as we have seen, the principle on which this inquiry is now conducted with governmental patronage. "Each American language," says George Bancroft, in his chapter on the dialects of North America, "was competent of itself, without improvement of scholars, to exemplify every rule of the logician and give utterance to every passion." In accordance with such perhaps extreme views, it has been usually said that the American languages are in development in advance of aboriginal progress in other respects. It is another common observation that while a certain resemblance runs through all the native tongues,[6] there is no such general resemblance to the old-world languages;[7] but at the same time the linguistic proof of the unity of the American race is not irrefragable,[8] and it would take tens of thousands of years, as Brinton holds, if there had been a single source, for the eighty stocks of the North American and for the hundred South American speeches to have developed themselves in all their varieties.[9] Proceeding beyond stocks to dialects, and counting varieties, Ludewig, in his *Literature of the American Languages*, gave 1,100 different American languages; but an alphabetical list given by H. W. Bates in his *Central America, West Indies and South America* (London, 1882, 2d ed.)[10] affords 1,700 names of such. The number, of course, depends on how exclusive we are in grouping dialects. Squier, for instance, gives only 400 tongues for both North and South America; for, as Nadaillac says, "philology has no precise definition of what constitutes a language."[11]

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[1] Cf. Waitz, *Introd. to Anthropology* (Eng. transl.), p. 238; Wedgwood, *Origin of Language*; Lubbock, *Origin of Civilization*, ch. 8; Tylor's *Anthropology*, ch. 6; Topinard's *Anthropologie*; J. P. Lesley's *Man's Origin and Destiny* (who considers the test so far a failure); William D. Whitney's "Testimony of language respecting the unity of the human race," in the *North American Review*, July, 1867.

[2] The "Lenguas y naciones Americanas" forms part of the first volume of Lorenzo Hervas's *Catálogo de las Lenguas de las Naciones Conocidas, y numeracion, division, y clases de estas segun la diversidad de sas idiomas y dialectos* (Madrid, 1800–1805, in 6 vols.), which served in some measure Johann Severin Vater, and J. C. Adelung in their *Mithridates, oder Allgemeine Sprachenkunde* (Berlin, 1806–17, in 4 vols.) and his *Analekten der Sprachenkunde* (Leipzig, 1821).

There has more been done so far to map out the ethnological fields of middle America than to determine those of the more northern parts. Cf. the map in Orozco y Berra's *Geografia de las lenguas de Mexico* (1864), and that in V. A. Malte-Brun's paper in the *Compte Rendu, Cong. des Américanistes*, 1877, ii. 10. The maps in Bancroft's *Native Races*, ii. and v., will serve ordinary readers. For the broader northern field, see the papers by L. H. Morgan and George Gibbs in the *Smithsonian Reports*, 1861, 1862. The Bureau of Ethnology have in preparation such a map, and they mark on it, it is understood, about seventy distinct stocks.

Cf. Horatio Hale on "Indian migrations as evidenced by language," in the *Amer. Antiquarian*, v. 18, 108 (Jan., April, 1883), and issued separately, Chicago, 1883. Lucien Adam criticised the views of Hall in the Copenhagen *Compte Rendu, Cong. des Amér.*, 1883, p. 123.

[3] *Nat. Races*, iii. 558.

[4] Cf. *Am. Antiq. Soc. Proc.*, April, 1879.

[5] *Fossil Men*, 310.

[6] A prominent feature is the process of uniting words lengthwise, so to speak, which gives a single utterance the import of a sentence. This characteristic of the American languages has been called polysynthetic, incorporative, holophrastic, aggregative, and agglutinative. H. H. Bancroft instances the word for letter-postage in Aztec as being "Amatlacuilolitquitcatlaxtlahuilli," which really signifies by its component parts, "payment received for carrying a paper on which something is written." Cf. Brinton's *On polysynthesism and incorporation as characteristic of American languages* (Philad., 1885).

[7] Hayden says: "The dialects of the western continent, radically united among themselves and radically distinguished from all others, stand in hoary brotherhood by the side of the most ancient vocal systems of the human race."

[8] Morgan, in his *Systems of Consanguinity*, contends for this linguistic unity, though (in 1866) he admits that "the dialects and stock languages have not been explored with sufficient thoroughness."

[9] Gallatin says of them: "They bear the impress of primitive languages, . . . and attest the antiquity of the population, — an antiquity the earliest we are permitted to assume." This was of course written before the geological evidences of the antiquity of man were understood, and the remoteness referred to was a period near the great dispersion of Babel.

[10] The appendix of this work has a good general summary of the Ethnography and Philology of America, by A. H. Keane.

[11] The interlinking method of communication between tribes of different languages is what is called sign or gesture language, and the study of it shows that in much the same forms it is spread over the continent. It has been specially studied by Col. Garrick Mallery. Cf. his papers in the *Amer. Antiquarian*, ii. 218; *Proc. Amer. Asso. Adv. Science*, Saratoga meeting, 1880; and at length in the *First Annual Rept. Bur. of Ethnology* (1881). He notes his sources of information on pp. 395, 401. He had earlier printed under the Bureau's sanction his *Introduction to the Study of Sign Language* (Washington, 1880). The subject is again considered in the *Third Rept.* of the Bureau, p. xxvi. Cf. also W. P. Clark's *Indian Sign-language, with Explanatory Notes* (Philad., 1885). Morgan (*Systems of Consanguinity*, 227) expresses the opinion that it has the germinal principle "from which came, first, the pictographs of the northern Indians and of the Aztecs; and, secondly, as its ultimate development, the ideographic and possibly the hieroglyphic language of the Palenqué and Copan monuments."

In addition to languages and dialects, we have a whole body of jargons, a conventional mixture of tongues, adduced by continued intercourse of peoples speaking different languages. They grew up very early, where the French came in contact with the aborigines, and Father Le Jeune mentions one in 1633 (*Hist. Mag.*, v. 345). The Chinook jargon, for instance, was, if not invented, at least developed by the Hudson Bay Company's servants, out of French, English, and several Indian tongues (whose share predomi-

The most comprehensive survey of the bibliography of American linguistics, excluding South America, is in Pilling's *Proof-sheets of a bibliography of the languages of the North American Indians* (Washington, 1885), a tentative issue of the Bureau of Ethnology, already mentioned. Pilling also earlier catalogued the linguistic MSS. in the library of the Bureau of Ethnology, in Powell's *First Report* of that Bureau (p. 553), in which that bibliographer also gave a sketch of the history of gathering such collections. A section of the *Bibliotheca Americana* of Charles Leclerc (Paris, 1878) is given to linguistics, and it affords by groups one of the best keys to the literature of the aboriginal languages which we yet have, and it has been supplemented by additional lists issued since by Maisonneuve of Paris. Ludewig's *Literature of American Aboriginal Languages, with additions by W. Turner* (London, 1858), was up to date, thirty years ago, a good list of grammars and dictionaries, but the increase has been considerable in this field since then (Pilling's *Eskimo Languages*, p. 62). The libraries of collectors of Spanish-American history, as enumerated elsewhere,[1] have usually included much on the linguistic history, and the most important of the printed lists for Mexico and Central America is that of Brasseur de Bourbourg's *Bibliothèque Mexico-Guatémalienne, précédée d'un coup d'œil sur les études américaines dans leurs rapports avec les études classiques, et suivi du tableau, par ordre alphabétique, des ouvrages de linguistique américaine contenus dans le même volume* (Paris, 1871). This list is repeated with additions in the *Catalogue de Alphonse L. Pinart et . . . de Brasseur de Bourbourg* (Paris, 1883). Field's *Indian Bibliography* characterizes some of the leading books up to 1873; but the best source up to about the same date for a large part of North America is found in the notes in that section of Bancroft's *Native Races*, vol. iii., given to linguistics.[2] The several *Comptes Rendus* of the Congrès des Américanistes have sections on the same subject, and the second volume of the *Contributions to North American Ethnology*, published by the U. S. Geological Survey (Powell's), has been kept back for the completion of the linguistic studies of the government officials, which will ultimately, under the care of A. S. Gatschet, compose that belated volume. Major Powell, in his conduct of ethnological investigations for the United States government, has found efficient helpers in James C. Pilling, J. Owen Dorsey, S. R. Riggs, A. S. Gatschet, not to name others. Powell outlined some of his own views in an address on the evolution of language before the Anthropological Society of Washington, of which there is an abstract in their *Transactions* (1881), while the paper can be found in perfected shape as "The evolution of language from a study of the Indian languages," in the *First Report of the Bureau of Ethnology.*

Among the earliest of the students of the native languages in the north were the Catholic missionaries in Canada and in the northwest, and there is much of interest in their observations as recorded in the *Jesuit Relations.* We find a *Dictionnaire de la langue huronne* in the *Grand Voyage du Pays des Hurons* (Paris, 1632, etc.).

The most conspicuous of the English publications of the seventeenth century was the Natick rendering of the *Bible* for the Massachusetts Indians, undertaken by the Apostle John Eliot, as he was called, at the expense of the London Society for the Propagation of the Gospel. Eliot also published a *Grammar of the Massachusetts Indian Language* (Cambridge, 1666), which, with notes by Peter S. Duponceau and an introduction by John Pickering, was printed for the Mass. Hist. Society in 1822, as was John Cotton's *Vocabulary of the Massachusetts Indian Language* (Cambridge, 1830). Roger Williams' *Key into the language of America* has been elsewhere referred to.[3] The Rev. Jonathan Edwards wrote a paper on the language of the Mohegan Indians, which, with annotations by Pickering, was printed in the *Mass. Hist. Soc. Coll.* in 1823, and is called by Haven (*Archæol. U. S.*, 29) the earliest exposition of the radical connection of the American languages. Dr. James Hammond Trumbull, the most learned of the students of these eastern languages, has furnished various papers on them in the publications of the American Philological Association and of the American Antiquarian Society,[4] and has summarized the literature of the subject, with references, in the *Memorial Hist. of Boston* (vol. i.).

In the eighteenth century there were several philological recorders among the missionaries. Sebastian Rasle made a *Dictionary of the Abnake Language*, now preserved in MS. in Harvard College library, which, edited by John Pickering, was published as a volume of the *Memoirs* of the Amer. Academy of Arts and Sciences in 1833. A grammatical sketch of the Abnake as outlined in Rasle's *Dictionary* is given by M. C. O'Brien in the *Maine Hist. Soc. Coll.*, vol. ix. The publications of the American Philosophical Society in Philadelphia have preserved for us the vocabularies and grammars of the Delaware language, collected and arranged by John Heckewelder[5] and David Zeisberger, while the latter Moravian missionary collected a considerable MS. store of linguistic traces of the Indian tongues, a part of which is now preserved in Harvard College library.[6] One of this last collection, an *Indian Dictionary; English, German, Iroquois (the*

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nates), to facilitate their trade with the natives, and does not contain, at an outside limit, more than 400 or 500 words. There is some reason to believe that the Indian portion of this jargon is older, however, than the English contact (Bancroft, iii. 632–3; Gibbs's *Chinook Dictionary*; Horatio Hale in Wilkes' *U. S. Explor. Exped.*).

[1] See the section on "Americana," with a foot-note on linguistic collections. Haven summed up what had been done in this field in 1855 in his *Archæology of the U. S.* p. 53.

[2] There is a less extensive survey, but wider in territory, in Short's *North Americans of Antiquity*, ch. 10.

[3] Vol. III. p. 355.

[4] See Pilling's *Proof-sheets.*

[5] Duponceau's report in Heckewelder, *Hist. Acc. of the Indian Nations*, 1819, is in the *Mass. Hist. Coll.*, 1822. Pickering says that Duponceau was the earliest to discover and make known the common characteristics of the American tongues.

[6] These are enumerated in the appendix of *The Calendar*

Onondaga), *and Algonquin* (*the Delaware*) (Cambridge, 1887,) has been carefully edited for the press by Eben Norton Horsford. Dr. John G. Shea published a *Dictionnaire Français-Onontagué, édité d'après un manuscrit du 17^e^ siècle* (N. Y., 1859), which is preserved in the Mazarin library in Paris.

There was no attempt made to treat the study of the American languages in what would now be termed a scientific spirit by any English scholar till towards the end of the eighteenth century. The whole question of the origin of the Indians had for a long time been the subject of discussion, and it had of necessity taken more or less of a philological turn from the beginning; but the inquiry had been simply a theoretical one, with efforts to substantiate preconceived beliefs rather than to formulate inductive ones, as in such works as — not to name others — Adair's *American Indians* (London, 1775), where every trace was referable to the Jews, and Count de Gebelin's *Monde Primitif* (Paris, 1781), where a comparison of American and European vocabularies is given.[1]

A much closer student appeared in Benjamin Smith Barton, of Philadelphia, though he was not wholly emancipated from these same prevalent notions of connecting the Indian tongues with the old-world speeches. He says that he was instigated to the study by Pallas' *Linguarum totius orbis Vocabularia comparativa* (Petropolis, 1786, 1789), and the result was his *New View of the Origin of the tribes and nations of America* (Philad., 1797; again, 1798). He sets forth in his introduction his methods of study. Charlevoix had suggested that the linguistic test was the only one in studying the ethnological connections of these peoples; but Barton asserted that there were other manifestations, equally important, like the physical aspects, the modes of worship, and the myths. He examined forty different Indian languages, and thinks they show a common origin, and that remotely a connection existed between the old and new continents.

The most eminent American student[2] of this field in the early half of this century was Albert Gallatin. He began his observations in 1823, at the instance of Humboldt, and two years later he took advantage of a representative convocation of Indian tribes, then held in Washington, to continue his studies of their speech. In 81 tribes brought under his notice he found what he thought to be 27 or 28 linguistic families. This was a wider survey than had before been made, and he regretted that he was not privileged to profit by the vocabularies collected by Lewis and Clark, which had unfortunately been lost. At the request of the Amer. Antiquarian Society, he wrote out and enlarged this study in the second volume of their *Collections* in 1836, and advanced views that he never materially changed, believing in a very remote Asiatic origin of the tongues, and without excepting the Eskimos from his conclusions. In 1845, in his *Notes on the semi-civilized nations of Mexico*, his conclusions were much the same, but he made an exception in favor of the Otomis. At this time he counted more than a hundred languages, similar in structure but different in vocabularies, and he argued that a very long period was necessary thus to differentiate the tongues. At the age of eighty-seven Gallatin gave his final results in vol. ii. of the *Transactions of the American Ethnological Society* (1848). Gallatin published a review[3] of the volume on Ethnography and Philology, which had been prepared by Horatio Hale as the seventh volume of the *Publications of the Wilkes United States Exploring Expedition* (1838–42), and Hale himself, then in the beginning of his reputation as a linguistic scholar,[4] published some papers of his own in the same volume of the *Transactions*.[5]

The two Americans who have done more than others, without the aid of the government, to organize aboriginal linguistic studies are Dr. John Gilmary Shea of Elizabeth, New Jersey, and Dr. Daniel Garrison

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of the Sparks MSS., issued by the library of Harvard University. They are also cited with some in other depositories by Pilling in his *Proof-sheets*.

[1] Also in J. B. Scherer's *Recherches historiques et géographiques sur le Nouveau Monde* (Paris, 1777).

[2] We know little of what Jefferson might have accomplished, for his manuscripts were burned in 1801 (Schoolcraft's *Ind. Tribes*, ii. 356). As early as 1804 the U. S. War Department issued a list of words, for which its agents should get in different tribes the equivalent words. Gallatin used these results. Different lists of test words have been often used since. George Gibbs had a list. The Bureau of Ethnology has a list.

[3] Cf. synopsis in Haven's *Archæol. U. S.*, p. 65.

[4] For Hale's later views see his *Origin of language and antiquity of speaking man* (Cambridge, 1886), from the *Proc. Amer. Ass. Adv. Science*, xxxv.; and his *Development of language* (Toronto, 1888), from the *Proc. Canadian Inst.*, 3d ser., vi.

[5] Among other workers in the northern philology may be named Schoolcraft in his *Indian Tribes* (ii. and iii. 340), who makes no advance upon Gallatin; W. W. Turner in the *Smithsonian Report*, vi.; R. S. Riggs adds a Dacota bibliography to his *Grammar and Dictionary of the Dacota language* (Washington, Smiths. Inst., 1852); George Gibbs in the *Smithsonian Repts.* for 1865 and 1870, and as collaborator in other studies, of which record is made in J. A. Stevens' memoir of Gibbs, first printed in the *N. Y. Hist. Soc. Coll.*, and then in the *Smithsonian Report* for 1873; F. W. Hayden's *Contributions to the ethnography and philology of the Indian tribes of the Missouri Valley* (Philad., 1862), being vol. xiii. of the *Trans. Amer. Philosophical Soc.*

A contemporary of Gallatin, but a man sorely harassed, as others see him, with eccentricities and unstableness of head, was C. F. Rafinesque, who had nevertheless a certain tendency to acute observation, which prevents his books from becoming wholly worthless. His first publication was an introduction to Marshall's *History of Kentucky*, which he printed separately as *Ancient History, or Annals of Kentucky, with a survey of the ancient monuments of North America, and a tabular view of the principal languages and primitive nations of the whole earth* (Frankfort, Ky., 1824). In this he makes a comparison of four principal words from fourteen Indian tongues with thirty-four primitive languages of the old world. In 1836 he printed at Philadelphia *The American Nations, or outlines of their general history, ancient and modern, including the whole history of the earth and mankind in the western hemisphere; the philosophy of American history; the annals, traditions, civilization, languages, etc., of all American nations, tribes, empires and states* (in two volumes).

Brinton of Philadelphia. Of Shea's *Library of American Linguistics* he has given an account in the *Smithsonian Rept.*, 1861.[1]

Dr. Brinton has set forth the purposes of his linguistic studies in an address before the Pennsylvania Historical Society, *American Aboriginal Languages and why we should study them* (Philad., 1885, — from the *Pennsylvania Magazine of History*, 1885, p. 15). In starting his *Library of Aboriginal American Literature*, he announced his purpose to put within the reach of scholars authentic materials for the study of the languages and culture of the native races, each work to be the production of the native mind, and to be printed in the original tongue, with a translation and notes, and to have some intrinsic historical or ethnological importance.[2]

The other considerable collections are both French. Alphonse L. Pinart published a *Bibliothèque de linguistique et d'ethnographie Américaines* (Paris and San Francisco, 1875–82).[3]

The publishing house of Maisonneuve et Compagnie of Paris, which has done more than any other business firm to advance these studies, has conducted a *Collection linguistique Américaine*, of much value to American philologists.[4]

Other French studies have attracted attention. Pierre Etienne Duponceau published a *Mémoire sur le système grammatical des langues de quelques nations indiennes de l'Amérique du Nord* (Paris, 1838).[5] He conducted a correspondence with the Rev. John Heckewelder respecting the American tongues, which is published in the *Transactions of the Amer. Philosophical Society* (Phil., 1819), and he translated Zeisberger's *Delaware Grammar.*

The studies of the Abbé Jean André Cuoq have been upon the Algonquin dialects,[6] and published mainly in the *Actes de la Société philologique* (Paris, 1869 and later). His monographic *Etudes philologiques sur quelques langues sauvages de l'Amérique* was printed at Montreal, 1866. It was the result of twenty years' missionary work among the Iroquois and Algonquins, and besides a grammar contains a critical examination of the works of Duponceau and Schoolcraft. Lucien Adam has been very comprehensive in his researches, his studies being collected under the titles of *Etudes sur six langues Américaines* (Paris, 1878) and *Examen grammatical comparé de seize langues Américaines* (Paris, 1878).[7]

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[1] It embraces:

FIRST SERIES: No. 1. J. G. Shea, *French Onondaga Dictionary.*

2. G. Mengarini, *Selish or Flat-head Grammar.*

3. B. Smith, *Grammatical Sketch of the Heve language.*

4. F. Arroyo de la Cuesta, *Grammar of the Mutsun language.*

5. B. Smith, *Grammar of the Pima or Névome language.*

6. M. C. Pandosy, *Grammar and Dictionary of the Yakama language.*

7. B. Sitjar, *Vocabulary of the language of the San Antonio Mission.*

8. F. Arroyo de la Cuesta, *Vocabulary or phrase-book of the Mutsun language.*

9. Abbé Maillard, *Grammar of the Micmaque language.*

10. J. Bruyas, *Radices Verborum Iroqæorum.*

11. G. Gibbs, *Alphabetical Vocabularies of the Clallam and Lummi.*

12. G. Gibbs, *Dictionary of the Chinook jargon.*

13. G. Gibbs, *Alphabetical Vocabulary of the Chinook language.*

SECOND SERIES: 1. W. Matthews, *Grammar and Dictionary of the language of the Hidatsa.*

2. W. Matthews, *Hidatsa-English Dictionary.*

The first series was printed in New York, 1860–63; the second, 1873–74. There is full bibliographical detail in Pilling's *Proof-sheets.*

[2] The following are already published:

1. *The Chronicles of the Mayas*, ed. by Brinton.
2. *The Iroquois Book of Rites*, ed. by Horatio Hale.
3. *The Comedy-ballet of Gueguence*, ed. by Brinton.
4. *The National Legend of the Creeks*, ed. by Albert S. Gatschet.
5. *The Lenâpé and their Legends.*
6. *The Annals of the Cakchiquels*, ed. by Brinton.

[3] This series contains:

1. Juan de Albornoz, *Arte de la lengua Chiapaneca y Doctrina Cristiana por Luis Barrientos* (Paris, 1875).

2. P. E. Pettitot, *Dictionnaire de la langue Dènè-Dindjie* (Paris, 1876).

3. P. E. Pettitot, *Vocabulaire Français-Esquimau* (Paris, 1876).

4. P. Franco, *Noticias de los Indios del Departamento de Veragua*, etc. (San Francisco, 1882).

Pilling (*Proof-sheets*, 589, 1042–1044) gives an account of Pinart's published and MS. linguistic collections, as well as (p. 587) of Francisco Pimentel's *Las Lenguas indígenas de México* (Mexico, 1862–65).

[4] It embraces:

1. E. Uricoechea, *Lengua Chibcha* (Paris, 1871).

2. Eujenio Castillo i Orozco, *Vocabulario Paéz-Castellano*, etc. (Paris, 1877).

3. Raymond Breton, *Grammaire Caraïbe, ed. par L. Adam et Ch. Leclerc* (Paris, 1878).

4. *Ollantai, drame, trad. par Pacheco Zegarra* (Paris, 1878).

5. R. Celedon, *La Lengua goajra, con una introd. por E. Uricoechea* (Paris, 1878).

6. L. Adam et V. Henry, *La Lengua Chiquita* (Paris, 1880).

7. Antonio Magio, *La Lengua de los Indios Baures* (Paris, 1880).

8. J. Crevaux, P. Sagot, et L. Adam, *Langues de la région des Guyanes* (Paris, 1882).

9. J. D. Haumonté, Parisot, et L. Adam, *La Langue Taensa* (Paris, 1882). This has been pronounced a deception.

10. Francisco Pareja, *La Lengua Timuquana*, 1614 (Paris, 1886).

[5] Cf. Pilling's *Proof-sheets*, pp. 217–218.

[6] Brinton (*Amer. Hero Myths*, 60), referring to Father Cuoq's *Lexique de la langue Iroquoise*, speaks of that author as "probably the best living authority on the Iroquois." Pilling, *Proof-sheets*, 185, etc., gives the best account of his writings. Cf. Mrs. E. A. Smith on the Iroquois in *Journal Anthropolog. Inst.*, xiv. 244.

[7] The languages covered are: Dakota, Chibcha, Nahuatl, Kechua, Quiché, Maya, Montagnais, Chippeway, Algonquin, Cri, Iroquois, Hidatsa, Chacta, Caraïbe, Kiriri, Guarani. Adam has been one of the leading spirits in the Congrès des Américanistes. There was published in 1882, as a part of the *Bibliothèque linguistique Américaine*, a *Grammaire et Vocabulaire de la langue taensa, avec*

The papers of the Count Hyacinthe de Charencey have been in the first instance for the most part printed in the *Revue de Linguistique*, the *Annales de Philosophie Chrétienne*, and the *Memoires de l'Académie de Caen*, and have wholly pertained to the tongues south of New Mexico; but his principal studies are collected in his *Mélanges de philologie et de paléographie Américaines* (Paris, 1883).[1]

The most distinguished German worker in this field, if we except the incidental labors of Alexander and William von Humboldt,[2] is J. C. E. Buschmann, whose various linguistic labors cover the wide field of the west coast of North America from Alaska to the Isthmus, with some of the regions adjacent on the east. He published his papers in Berlin between 1853 and 1864, and many of them in the *Mémoires de l'Académie de Berlin*.[3]

Dr. Carl Hermann Berendt has published his papers in Spanish, English, and German. and some of them will be found in the *Smithsonian Reports*, in the Berlin *Zeitschrift für Ethnologie*, and in the *Revista de Mérida*. Under the auspices of the American Ethnological Society, a fac-simile reproduction of his graphic *Analytical Alphabet for the Mexican and Central American languages* was published in 1869, the result of twelve years' study in those countries.[4]

The languages of what are called the civilized nations of the central regions of America deserve more particular attention.

In the Mexican empire the Aztec was largely predominant, but not exclusively spoken, for about twenty other tongues were more or less in vogue in different parts. Humboldt and others have found occasional traces in words of an earlier language than the Aztec or Nahua, but different from the Maya, which in Brasseur's opinion was the language of the country in those pre-Nahua days. Bancroft, contrary to some recent philologists, holds the speech of the Toltec, Chichimec, and Aztec times to be one and the same.[5] It was perhaps the most copious and most perfected of all the aboriginal tongues; and in proof of this are cited the opinions of the early Spanish scholars, the successes of the missionaries in the use of it in imparting the subtleties of their faith, and the literary use which was made of it by the native scholars, as soon as they had adapted the Roman alphabet to its vocabulary and forms.[6]

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textes traduits et commentés par J. D. Haumonté, Parisot, L. Adam. It was printed from a manuscript said to have been discovered in 1872, in the library of Mons. Haumonté. Dr. Brinton, finding, as he claimed, that Adam had been imposed upon, printed in the *American Antiquarian*, March, 1885, "The Tænsa Grammar and Dictionary, a Deception Exposed," the points of which were epitomized by Professor H. W. Haynes in the *American Antiquarian Society Proceedings* (April, 1885), and Adam answered in *Le Tænsa, a-t-il été forgé de toutes pièces* (Paris, 1885).

The languages of the southern and southwestern United States have been particularly studied by Albert S. Gatschet, among whose publications may be named *Zwölf Sprachen aus dem Südwesten Nord Amerikas* (Weimar, 1877); *The Timucua language* of Florida (Philad., 1878, 1880); *The Chumeto language* of California (Philad., 1882); *Der Yuma Sprachstamm* of Arizona and the neighboring regions (Berlin, 1877, 1883); *Wortverzeichniss eines Viti-Dialectes* (Berlin, 1882); *The Shetimasha Indians of St. Mary's Parish, Louisiana* (Washington, 1883); but his most important contribution is the linguistic, historic, and ethnographic introduction to his *Migration Legend of the Creek Indians* (Philad., 1884), in which he has surveyed the whole compass of the southern Indians. The extent of Mr. Gatschet's studies will appear from Pilling's *Proof-sheets*, pp. 285–292, 955.

[1] *Contents.* — 1. Sur quelques familles de langues du Méxique. 2. Sur différents idiomes de la Nouvelle-Espagne. 3. Sur la famille de langues Tapijulapane-Mixe. 4. Sur la famille de langue Pirinda-Othomi. 5. Sur les lois phonétiques dans les idiomes de la famille Mame-Huastèque. 6. Sur le pronom personnel dans les idiomes de la famille Maya-Quiché. 7. Sur l'étude de la prophétie en langue Maya d'Ahkuil-Chel. 8. Sur le système de numération chez les peuples de la famille Maya-Quiché. 9. Sur le déchiffrement des écritures calculiformes du Mayas. 10. Sur les signes de numération en Maya.

Pilling (*Proof-sheets*, pp. 145–148, 904–906) enumerates many of the separate publications.

[2] Brinton has printed *The philosophical grammar of the American languages as set forth by Wilhelm von Humboldt, with a translation of an unpublished memoir by him on the American verb* (Philad., 1885). The great work of A. von Humboldt and Bonpland, *Voyage aux régions équinoxiales du nouveau continent* (Paris, 1816–31), gives some linguistic matter in the third volume.

[3] These are enumerated in the list in Bancroft, i.; in Field, nos. 208–218; and in Leclerc, *Index;* with more detail in Pilling's *Proof-sheets*, pp. 102–110, 894–896. Cf. also Sabin, iii. nos. 9,521 etc.

[4] Brinton, who possesses his papers, published a *Memoir* of him in the *Am. Antiq. Soc. Proc.*, 1884. His publications and MS. collections are given in Pilling's *Proof-sheets*, pp. 72, 73, 879–881.

[5] He cites (iii. 725–26) many opinions; and quotes Sahagún as saying that the Apalaches were Nahuas and spoke the Mexican tongue (*Ibid.* iii. 727). Is this any evidence of the Floridian immigration?

[6] A considerable body of literature in this language has come down to us. Bancroft (iii. 728) enumerates a number of the principal religious manuals, etc. Icazbalceta in the first volume of his *Bibliografia Mexicana* (Mexico, 1886), in cataloguing the books issued in Mexico before 1600, includes all that were printed in the native tongue. Brinton gives some account of such native authors in his *Aboriginal American authors and their productions, especially those in the native languages. A chapter in the history of literature* (Philad., 1883). Cf. his paper in the *Congrès des Amér.*, Copenhagen, 1883, p. 54. Bancroft (iii. 730) gives some citations as to its literary value. Brinton has illustrated this quality in some of his lesser monographs, as in his *Ancient Nahuatl Poetry* (Philad., 1887); and in his *Study of the Nahuatl language* (1886), in which he gives specimens and enumerates the dictionaries and texts. He says there are more than a hundred authors in it (*Amer. Antiquarian*, viii. 22). Icazbalceta has collected many Nahua MSS., and his brother-in-law, Francisco Pimentel, has used them in his *Cuadro descriptivo y comparativo de las Lenguas indígenas de México* (1862), of which there is a German translation by Isidor Epstein (N. Y., 1877). This is based on a second augmented edition (Mexico, 1874–75), in which the tongues of northern Mexico are better represented, and a general classification of the languages is added. Pimentel (i. 154) asserts that it is a mistake to suppose that the Chichimecs spoke Nahua. Cf.,

The Maya has much the same prominence farther south that the Nahua has in the northerly parts of the territory of the Spanish conquest, and a dialect of it, the Tzendal, still spoken near Palenqué, is considered to be the oldest form of it, though probably this dialect was a departure from the original stock. It is one of the evidences that the early Mayas may have come by way of the West India islands that modern philologists say the native tongues of those islands were allied to the Maya. Bancroft (iii. 759, with other references, 760) refers to the list of spoken tongues given in Palacio's *Carta al Rey de España* (1576) as the best enumeration of the early Spanish writers.[1] For its literary value we must consult some of the authorities like Orozco y Berra, mentioned in connection with the Aztec. Squier published a *Monograph of authors who have written on the languages of Central America, and collected vocabularies and composed works in the native dialects of that country* (Albany, 1861,—100 copies), in which he mentions 110 such authors, and gives a list of their printed and MS. works. Those who have used these native tongues for written productions are named in Ludewig's *Literature of the Amer. Aborig. Languages* (London, 1858), and in Brinton's *Aboriginal American Authors* (Phila., 1883).[2]

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however, Bancroft (iii. 724) and Short, 255, 480. Pimentel's opinions are weighty, and follow in this respect those of Orozco y Berra, Sahagún, Ixtlilxochitl; but later, Veytia had maintained the reverse.

Lucien Adam includes the Nahua in his *Etudes sur six langues Américaines* (Paris, 1878). Aubin wrote "Sur la langue Méxicaine et la philologie Américaine" in the *Archives de la Soc. Amér. de France*, n. s., vol. i. Brasseur contributed various articles on Mexican philology to the *Revue Orientale et Américaine*. Dr. C. Hermann Berendt formed an *Analytical Alphabet for the Mexican and Central America languages* (N. Y., 1869). Buschmann has a study in the *Mémoirs de l'Académie de Berlin*, and separately, *Ueber die Astekischen Ortsnamen* (Berlin, 1853). Henri de Charencey in his *Mélanges de Philologie* (Paris, 1883) has a paper "Sur quelques familles de langues du Méxique." V. A. Malte-Brun gave in the *Compte Rendu, Cong. des Américanistes*, 1877 (vol. ii. p. 10), a paper "La distribution ethnographique des nations et des langues au Méxique." Reference has been made elsewhere to the important publication of Manuel Orozco y Berra, *Geografia de las lenguas y carta etnográfica de México, precedidos de un ensayo de classificacion de las mismas lenguas y de apuntes para las inmigraciones de las tribus* (Mexico, 1864). The work is said to be the fruit of twelve years' constant study, and to have been based in some part on MSS. belonging to Icazbalceta, dating back to the latter part of the sixteenth century (enumerated in *Peab. Mus. Repts*, ii. 559). There is some adverse criticism. Peschel (*Races of Men*, 438) thinks the linguistic map of Mexico in Orozco y Berra's work the only good feature in the book, since the author spreads old errors anew in consequence of his unacquaintance with Buschmann's researches. A series of linguistic monographic essays on the Aztec names of places is embraced in Dr. Antonio Peñafiel's *Nombres Geografico de Mexico. Catalogo alfabetico de los nombres de lugar pertenecientes al idioma "Nahuatl": estudio jeroglifico de la matricula de los tributos del codice Mendocino* (Mexico, 1885). In the *Archives de la Soc. Amér. de France*, n. s., 179, iii. there is an essay by Siméon, "La langue Méxicaine et son histoire."

The affiliation of the Aztec with the Pueblo stocks is traced by Bancroft, iii. 665, who follows out the diversities of those stocks (pp. 671, 681). Cf. for various views Morgan's *Systems of Consanguinity*, 260; Buschmann's *Die Völker und Sprachen Neu Mexico's*, and *First Rept. Bur. of Ethnology*, p. xxxi.

[1] Some authorities give fourteen dialects of the Maya. Cf. the table in Bancroft, iii. 562, etc., and the statements in Garcia y Cubas, translated by Geo. F. Henderson as *The Republic of Mexico*. It is still spoken in the greatest purity about the Balize, as is commonly said; but Le Plongeon goes somewhat inland and says he found it "in all its pristine purity" in the neighborhood of Lake Peten. Le Plongeon, with that extravagance which has in the end deprived him of the sympathy and encouragement due to his noteworthy labors, says, "One third of this Maya tongue is pure Greek," following Brasseur in one of his vagaries, who thought he found in 15,000 Maya vocables at least 7,000 that bore a striking resemblance to the language of Homer.

[2] The bibliographies will add to this enumeration. The *Pinart Catalogue* (pp. 98–100) gives a partial list. Only some of the more important monographs upon features of the Maya language can be mentioned: Father Pedro Beltran de Santa Rosa's *Arte del idioma Maya* (Mexico, 1746) was so rare that Brasseur did not secure it, but Leclerc catalogues it (no. 2,280), as well as the reprint (Merida, 1859) edited by José D. Espinosa. There is a study of the Maya tongues included in a paper printed first by Carl Hermann Berendt in the *Journal of the Amer. Geog. Soc.* (viii. 132, for 1876), which was later issued separately as *Remarks on the centres of ancient civilization in Central America and their geographical distribution* (N. Y., 1876). It is accompanied by a map. (Cf. also his "Explorations in Central America" in the *Smithsonian Rept.*, 1867.) Brasseur included in his *Manuscrit Troano* (Paris, 1869–70), and later published separately, a *Dictionnaire, Grammaire et Chrestomathie de la langue Maya* (Paris, 1872); the dictionary containing 10,000 words, the grammar being a translation from Father Gabriel de Saint Bonaventure, while the chrestomathy was a gathering of specimens ancient and modern, of the language. Brasseur, in his mutable way, found in the first season of his studies the Greek, Latin, English, German, Scandinavian, not to name others, to have correspondences with the Maya, and ended in deriving them from that tongue as the primitive language. (Cf. Short, 476.) Dr. Brinton has a paper on *The Ancient Phonetic Alphabet of Yucatan* (N. Y., 1870), and he read at the Buffalo meeting (1886) of the Amer. Assoc. for the Advancement of Science a paper on the phonetic element of the graphic system of the Mayas, etc., which is printed in the *American Antiquarian*, viii. 347. In the introduction of his *Maya Chronicles* (Philad., 1882) he examines the language and literature of the Mayas. He refers to a "Disertacion sobre la historia de la lengua Maya o Yucateca" by Crescencio Carrello y Ancona in the *Revista de Merida*, 1870. Charencey has printed various special papers, like a *Fragment de Chrestomathie de la langue Maya antique* (Paris, 1875) from the *Revue de Philologie et d'Ethnographie*, and a paper read before the Copenhagen meeting of the Congrès des Américanistes (*Compte Rendu*, p. 379), "De la formation des mots en lengua Maya." Landa's *Relation* as published by Brasseur (Paris, 1864) is of course a leading source.

Of the Quiché branch of the Maya we know most from Brasseur's *Popul Vuh* and from his *Gramatica de la lengua Quiché* (Paris, 1862), in the appendix of which he printed the *Rabinal Achi*, a drama in the Quiché tongue. Father Ildefonso José Flores, a native of the country, was professor of the Cakchiquel language in the university of Guatemala in the last century, and published a *Arte de la lengua metropolitana del Reyno Cakchiquel* (Guatemala, 1753), which was unknown to later scholars, till Brasseur discovered a copy in 1856 (Leclerc, no. 2,270). The literature of the Cakchiquel dialect is examined in the introduction to Brinton's *Grammar of the Cakchiquel language*

The philology of the South American peoples has not been so well compassed as that of the northern continent. The classified bibliographies show the range of it under such heads as Ande (or Campa), Araucanians (Chilena), Arrawak, Aymara, Brazil (the principal work being F. P. von Martius's *Beiträge zur Ethnographie und Sprachenkunde Amerika's, zumal Brasiliens*, Leipzig, 1867, with a second part called *Glossaria linguarum brasiliensium*, Erlangen, 1863), Chama, Chibcha (or Muysca, Mosca), Cumanagota, Galibi, Goajira, Guarani, Kiriri (Kariri), Lule, Moxa, Paez, Quichua, Tehuelhet, Tonocote, Tupi, etc.

(Philad., 1884), edited for the American Philosophical Society. Cf. Brinton's little treatise *On the language and ethnologic position of the Xinca Indians of Guatemala* (Philadelphia, 1884); his *So-called Alaguilac language of Guatemala* in the *Proc. Am. Philosoph. Soc.*, 1887, p. 366; and Otto Stoll's *Zur Ethnographie der Republik Guatemala* (Zurich, 1884).

We owe to Brinton, also, a few discussions of the Nicaragua tongues, both in their Maya and Aztec relations. He has discussed the local dialect of this region in the introduction of *The Güegüence; a comedy ballet in the Nahuatl-Spanish dialect of Nicaragua* (Philadelphia, 1883), and in his *Notes on the Mangue, an extinct dialect formerly spoken in Nicaragua* (Philadelphia, 1886).

V.

BIBLIOGRAPHICAL NOTES ON THE MYTHS AND RELIGIONS OF AMERICA.

By the Editor.

THE earliest scholarly examination of the whole subject, which has been produced by an American author, is Daniel G. Brinton's *Myths of the New World, a treatise on the symbolism and mythology of the Red Race of America* (N. Y., 1868; 2d ed., 1876). It is a comparative study, "more for the thoughtful general reader than for the antiquary," as the author says. "The task," he adds, "bristles with difficulties. Carelessness, prepossessions, and ignorance have disfigured the subject with false colors and foreign additions without number" (p. 3). After describing the character of the written, graphic, or symbolic records, which the student of history has to deal with in tracing North American history back before the Conquest, he adds, while he deprives mythology of any historical value, that the myths, being kept fresh by repetition, were also nourished constantly by the manifestations of nature, which gave them birth. So while taking issue with those who find history buried in the myths, he warns us to remember that the American myths are not the reflections of history or heroes. In the treatment of his subject he considers the whole aboriginal people of America as a unit, with "its religion as the development of ideas common to all its members, and its myths as the garb thrown around those ideas by imaginations more or less fertile; but seeking everywhere to embody the same notions."[1] This unity of the American races is far from the opinion of other ethnologists.

Brinton gives a long bibliographical note on those who had written on the subject before him, in which he puts, as the first (1819) to take a philosophical survey, Dr. Samuel Farmer Jarvis in a *Discourse on the religion of the Indian tribes of North America*, printed in the *N. Y. Hist. Soc. Collections*, iii. (1821). Jarvis confined himself to the tribes north of Mexico, and considered their condition, as he found it, one of deterioration from something formerly higher. There had been, of course, before this, amassers of material, like the Jesuits in Canada, as preserved in their *Relations*,[2] sundry early French writers on the Indians,[3] the English agents of the Society for the Propagation of the Gospel in New England, and the Moravian missionaries in Pennsylvania and the Ohio country, to say nothing of the historians, like Loskiel (*Geschichte der Mission*, 1789), Vetromile (*Abnakis and their History*, New York, 1866), Cusick (*Six Nations*), not to mention local observers, like Col. Benjamin Hawkins, *Sketch of the Creek Country* (*Georgia Hist. Soc. Collections*, 1848, but written about 1800).

If the placing of Brinton's book as the earliest scholarly contribution is to be contested, it would be for E. G. Squier's *Serpent Symbol in America* (N. Y., 1851);[4] but the book is not broadly based, except so far as such comprehensiveness can be deduced from his tendency to consider all myths as having some force of nature for their motive, and that all are traceable to an instinct that makes the worship of fire or of the sun the centre of a system.[5] With this as the source of life, Squier allies the widespread phallic worship. In Bancroft's *Native Races* (iii. p. 501) there is a summary of what is known of this American worship of the generative power. Brinton doubts (*Myths*, etc., 149) if anything like phallic worship really existed, apart from a wholly unreligious surrender to appetite.

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[1] Notwithstanding this commonness of origin, if such be the case, there is a striking truth in what Max Müller says: "The thoughts of primitive humanity were not only different from our thoughts, but different also from what we think their thoughts ought to have been."

[2] See Vol. IV. p. 295.

[3] Such are Sagard's *Histoire du Canada* (1636); Nicolas Perrot's *Mémoire sur les Mœurs, Coutumes et Religion des Sauvages*, involving his experience from 1665 to 1699; Lafitau's *Mœurs des Sauvages* (1724), and the like.

[4] Bancroft (iii. 136) says: "It does not appear, notwithstanding Mr. Squier's assertion to the contrary, that the serpent was actually worshipped either in Yucatan or Mexico." Cf. Brinton's *Myths*, ch. 4; Chas. S. Wake's *Serpent Worship* (London, 1888); and J. G. Bourke's *Snake-dance of the Moquis of Arizona; being a narrative of a journey from Santa Fé, New Mexico, to the villages of the Moqui Indians of Arizona, with a description of the manners and customs of this peculiar people, to which is added a brief dissertation upon serpent-worship in general, with an account of the tablet dance of the Pueblo of Santo Domingo, New Mexico, etc.* (London, 1884).

[5] Brinton (*Myths*, etc., 141) declares sun-worship, which some investigators have made the base of all primitive religions, to be but a "short and easy method with mythology," and that "no one key can open all the arcana of symbolism." He refers to D'Orbigny (*L'Homme Américain*), Müller (*Amer. Urreligionen*), and Squier (*Serpent Symbol*) as supporting the opposing view. We may find like supporters of the sun as a central idea in Schoolcraft, Tylor, Brasseur. Cf. Bancroft's *Native Races* (iii. 114) in opposition to Brinton.

Another view which Squier maintains is, that above all this and pervading all America's religious views there was a sort of rudimentary monotheism.[1]

When we add to this enumeration the somewhat callow and wholly unsatisfactory contributions of Schoolcraft in the great work on the *Indian Tribes of the United States* (1851–59), which the U. S. government in a headlong way sanctioned, we have included nearly all that had been done by American authors in this field when Bancroft published the third volume of his *Native Races*. This work constitutes the best mass of material for the student — who must not confound mythology and religion — to work with, the subject being presented under the successive heads of the origin of myths and of the world, physical and animal myths, gods, supernatural beings, worship and the future state; but of course, like all Bancroft's volumes, it must be supplemented by special works pertaining to the more central and easterly parts of the United States, and to the regions south of Panama. The deficiency, however, is not so much as may be expected when we consider the universality of myths. "Unfortunately," says this author, "the philologic and mythologic material for such an exhaustive synthesis of the origin and relations of the American creeds as Cox has given to the world in the Aryan legends in his *Mythology of the Aryan Nations* (London, 1870) is yet far from complete."

In 1882 Brinton, after riper study, again recast his views of a leading feature of the subject in his *American hero-myths; a study in the native religions of the western continent* (Philad., 1882), in which he endeavored to present "in a critically correct light some of the fundamental conceptions in the native beliefs." His purpose was to counteract what he held to be an erroneous view in the common practice of considering "American hero-gods as if they had been chiefs of tribes at some undetermined epoch," and to show that myths of similar import, found among different peoples, were a "spontaneous production of the mind, and not a reminiscence of an historic event." He further adds as one of the impediments in the study that he does "not know of a single instance on this continent of a thorough and intelligent study of a native religion made by a Protestant missionary."[2] After an introductory chapter on the American myths, Brinton in this volume takes up successively the consideration of the hero-gods of the Algonquins and Iroquois, the Aztecs, Mayas, and the Quichuas of Peru. These myths of national heroes, civilizers, and teachers are, as Brinton says, the fundamental beliefs of a very large number of American tribes, and on their recognition and interpretation depends the correct understanding of most of their mythology and religious life, — and this means, in Brinton's view, that the stories connected with these heroes have no historic basis.[3]

The best known of the comprehensive studies by a European writer is J. G. Müller's *Geschichte der Amerikanischen Urreligionen* (Basle, 1855; again in 1867), in which he endeavors to work out the theory that at the south there is a worship of nature, with a sun-worship for a centre, contrasted at the north with fetichism and a dread of spirits, and these he considers the two fundamental divisions of the Indian worship. Bancroft finds him a chief dependence at times, but Brinton, charging him with quoting in some instances at second-hand, finds him of no authority whatever.

One of the most reputable of the German books on kindred subjects is the *Anthropologie der Naturvölker* (Leipzig, 1862–66) of Theodor Waitz. Brinton's view of it is that no more comprehensive, sound, and critical work on the American aborigines has been written; but he considers him astray on the religious phases, and that his views are neither new nor tenable when he endeavors to subject moral science to a realistic philosophy.[4]

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[1] This monotheism is denied by Brinton (*Myths of the New World*, 52). "Of monotheism, either as displayed in the one personal definite God of the Semitic races, or in the dim pantheistic sense of the Brahmins, there was not a single instance on the American continent," — the Iroquois "Neu" and "Hawaneu," which, as Brinton says, have deceived Morgan and others, being but the French "Dieu" and "Le bon Dieu" rendered in Indian pronunciation (*Myths of the New World*, p. 53). The aborigines instituted, however, in two instances, the worship of an immaterial god, one among the Quichuas of Peru and another at Tezcuco (*Ibid.* p. 55).

Bandelier (*Archæol. Tour*, 185), examining the *Hist. de los Méxicanos por sus Pinturas* (*Anales del Museo*, ii. 86), Motolinía, Gómara, Sahagún, Tobar, and Durán, finds no trace of monotheism till we come to Acosta. Torquemada speaks of supreme *gods*; and Bandelier thinks that Ixtlilxochitl, in conveying the idea of a single god, evidently distorts and disfigures Torquemada.

Bancroft (iii. 198) accords honesty to Ixtlilxochitl's account of the religion of the Tezcucan ruler Nezahualcoyotl, as reaching the heights of Mexican monotheistic conception, because he thinks his descendants, if he had fabled, would never have ended his description with so pagan a statement as that which makes the Tezcucan recognize the sun as his father and the earth as his mother.

Max Müller tells us that we should distinguish between monotheism and henotheism, which is the temporary preeminence of one god over the host of gods, and which was as near monotheism as the American aborigines came.

[2] He also masses the evidence which shows, as he thinks, that "on Catholic missions has followed the debasement, and on Protestant missions the destruction, of the Indian race." *Amer. Hero-Myths*, pp. 206, 238.

[3] Unfortunately, Brinton enforces this view and others with a degree of confidence that does not help him to convince the cautious reader, as when he speaks of the opinions of those who disagree with him as "having served long enough as the last refuge of ignorance" (*Amer. Hero-Myths*, 145).

[4] The whole question of comparative mythology involves in its broad aspects the subject of American myths. The literature of this general kind is large, but reference may be made to Girard de Rialle's *La Mythologie Comparée* (Paris, 1878); for the idea of God, Dawson's *Fossil Men*, ch. 9 and 10; Lubbock's *Origin of Civilization*, ch. 4, 5, 6; J. P. Lesley's *Man's origin and destiny*, ch. 10; and for the geographical distribution of myths, Tylor's *Early Hist. of Mankind*, ch. 12; Max Müller's *Chips*, vol. ii.; and in a general way, Brinton's *Religious sentiment, its source and aim* (N. Y., 1876). Reference may also be made to Joly's *Man before Metals*, ch. 7; Dabry de Thiersant's *Origine des indiens* (Paris, 1883); and G. Brühl's *Culturvölker Alt-Amerikas* (Cincinnati, 1876–78), ch. 10 and 19.

In speaking of the scope of the comprehensive work of H. H. Bancroft we mentioned that beyond the larger part of the great Athapascan stock of the northern Indians his treatment did not extend. Such other general works as Brinton's *Myths of the New World*, the sections of his *American Hero-Myths* on the hero-gods of the Algonquins and Iroquois, and the not wholly satisfactory book of Ellen R. Emerson, *Indian myths; or, Legends, traditions, and symbols of the aborigines of America, compared with those of other countries, including Hindostan, Egypt, Persia, Assyria, and China* (Boston, 1884), with aid from such papers as Major J. W. Powell's "Philosophy of the North American Indians" in the *Journal of the Amer. Geographical Society* (vol. viii. p. 251, 1876), and his "Mythology of the North American Indians" in the *First Annual Rept. of the Bureau of Ethnology* (1881), and R. M. Dorman's *Origin of primitive superstition among the aborigines of America* (Philad., 1881), must suffice in a general way to cover those great ethnic stocks of the more easterly part of North America, which comprise the Iroquois, centred in New York, and surrounded by the Algonquins, west of whom were the Dacotas, and south of whom were the Creeks, Choctaws, and Chickasaws, sometimes classed together as Appalachians.[1]

The mythology of the Aztecs is the richest mine, and Bancroft in his third volume finds the larger part of his space given to the Mexican religion.

Brinton (*Amer. Hero Myths*, 73, 78), referring to the "Historia de los Méxicanos por sus Pinturas" of Ramirez de Fuen-leal, as printed in the *Anales del Museo Nacional* (ii. p. 86), says that in some respects it is to be considered the most valuable authority which we possess,[2] as taken directly from the sacred books of the Aztecs, and as explained by the most competent survivors of the Conquest.[3]

We must also look to Ixtlilxochitl and Sahagún as leading sources. From Sahagún we get the prayers which were addressed to the chief deity, of various names, but known best, perhaps, as Tezcatlipoca; and these invocations are translated for us in Bancroft (iii. 199, etc.), who supposes that, consciously or unconsciously, Sahagún has slipped into them a certain amount of "sophistication and adaptation to Christian ideas." From the lofty side of Tezcatlipoca's character, Bancroft (iii. ch. 7) passes to his meaner characteristics as the oppressor of Quetzalcoatl.

The most salient features of the mythology of the Aztecs arise from the long contest of Tezcatlipoca and Quetzalcoatl, the story of which modified the religion of their followers, and, as Chavero claims, greatly affected

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Brinton (*Myths*, 210) tracks the Deluge myth among the Indians, and Bancroft gives many instances of it (*Native Races*, v., index). Brinton thinks a paper by Charencey, "Le Déluge d'après les traditions indiennes de l'Amérique du Nord," in the *Revue Américaine*, a help for its extracts, but complains of its uncritical spirit.

We find sufficient data of the aboriginal belief in the future life both in Bancroft's final chapter (vol. iii. part i.) and in Brinton's *Myths*, ch. 9. Brinton delivered an address on the "Journey of the soul," which is printed in the *Proceedings* (Jan., 1883) of the Numismatic and Antiquarian Society of Philadelphia.

[1] In studying the mythology of these tribes we must depend mainly on confined monographs. Mrs. E. A. Smith treats the myths of the Iroquois in the *Second Annual Rept. Bureau of Ethnology*. Charles Godfrey Leland has covered *The Algonquin legends of New England; or, myths and folk-lore of the Micmac, Passamaquoddy, and Penobscot tribes* (Boston, 1884). Brinton has a book on *The Lenâpé and their legends* (Philad., 1885); and one may refer to the *Life and Journals of David Brainard*. S. D. Peet has a paper on "The religious beliefs and traditions of the aborigines of North America" in the *Journal of the Victoria Institute* (London, 1888, vol. xxi. 229); one on "Animal worship and Sun worship in the east and west compared" in the *American Antiquarian*, Mar., 1888; and a paper on the religion of the moundbuilders in *Ibid.* vi. 393. The *Dahcotah, or life and legends of the Sioux around Fort Snelling* (N. Y., 1849) of Mrs. Mary Eastman has been a serviceable book. S. R. Riggs covers the mythology of the Dakotas in the *Amer. Antiquarian* (v. 147), and in this periodical will be found various studies concerning other tribes.

[2] Bandelier, *Archæol. Tour*, 185, calls it the earliest statement of the Nahua mythology.

[3] There is more or less of original importance on the Aztec myths in Alfredo Chavero's "La Piedra del Sol," likewise in the *Anales* (vol. i.). Cf. also the "Ritos Antiguos, sacrificios e idolatrias de los indios de la Nueva España," as printed in the *Coleccion de doc. ined. para la hist. de España* (liii. 300).

Bancroft (vol. iii. ch. 6–10), who is the best source for reference, gives also the best compassed survey of the entire field; but among writers in English he may be supplemented by Prescott (i. ch. 3, introd.); Helps in his *Spanish Conquest* (vol. ii.); Tylor's *Primitive Culture;* Albert Réville's *Lectures on the origin and growth of religion as illustrated by the native religions of Mexico and Peru*, translated by P. H. Wicksteed (London, 1884, being the Hibbert lectures for 1884); on the analogies of the Mexican belief, a condensed statement in Short's *No. America of Antiq.*, 459; a popular paper in *The Galaxy*, May, 1876. Bandelier intended a fourth paper to be added to the three printed in the *Peabody Mus. Repts.* (vol. ii.), namely, one on "The Creeds and Beliefs of the Ancient Mexicans," which has never, I think, been printed.

Among the French, we may refer to Ternaux-Compans' *Essai sur la théogonie Méxicaine* (Paris, 1840) and the works of Brasseur. Klemm's *Cultur-Geschichte* and Müller's *Urreligionen* will mainly cover the German views. Of the Mexican writers, it may be worth while to name J. M. Melgar's *Examen comparativa entre los signos simbolicos de las Teogonias y Cosmogonias antiguas y los que existen en los manuscritos Méxicanos* (Vera Cruz, 1872).

The readiest description of their priesthood and festivals will be found in Bancroft (ii. 201, 303, with references). Tenochtitlan is said to have had 2,000 sacred buildings, and Torquemada says there were 80,000 throughout Mexico; while Clavigero says that a million priests attended upon them. Bancroft (iii. ch. 10) describes this service. There is a chance in all this of much exaggeration.

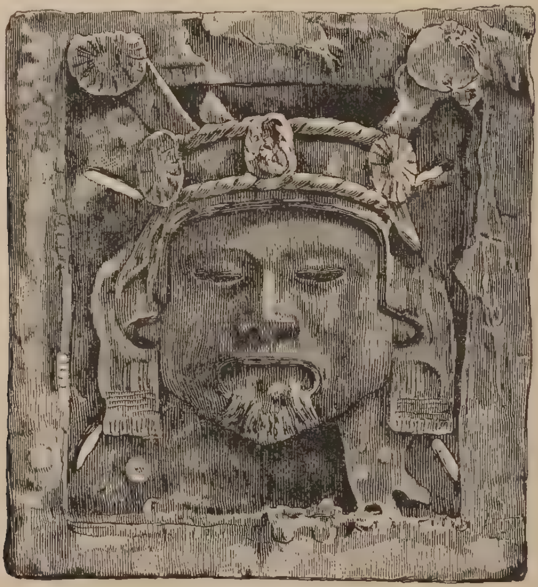
The history of human sacrifice as a part of this service is the subject of disagreement among the earlier as well as with the later writers. Bancroft (iii. 413, 442) gives some leading references. Cf. Prescott (i. 77) and Nadaillac (p. 296). Las Casas in his general defence of the natives places the number of sacrifices very low. Zumárraga says there were 20,000 a year. The Aztecs, if not originating the practice, as is disputed by some, certainly made much use of it.

their history.[1] This struggle, according as the interpreters incline, stands for some historic or physical rivalry, or for one between St. Thomas and the heathen;[2] but Brinton explains it on his general principles as one between the powers of Light and Darkness (*Am. Hero Myths*, 65).

The main original sources on the character and career of Quetzalcoatl are Motolinía, Mendieta, Sahagún, Ixtlilxochitl, and Torquemada, and these are all summarized in Bancroft (iii. ch. 7).

It has been a question with later writers whether there is a foundation of history in the legend or myth of Quetzalcoatl. Brinton (*Myths of the New World*, 180) has perhaps only a few to agree with him when he calls that hero-god a "pure creature of the fancy, and all his alleged history nothing but a myth," and he thinks some confusion has arisen from the priests of Quetzalcoatl being called by his name.

Bandelier (*Archæol. Tour*) takes issue with Brinton in deeming Quetzalcoatl on the whole an historical person, whom Ixtlilxochitl connects with the pre-Toltec tribes of Olmeca and Xicalanca, and whom Torquemada says came in while the Toltecs occupied the country. Bandelier thinks it safe to say that Quetzalcoatl began his career in the present state of Hidalgo as a leader of a migration moving southward, with a principal sojourn at Cholula, introducing arts and a purer worship. This is substantially the view taken by J. G. Müller, Prescott, and Wuttke.



QUETZALCOATL.*

Bancroft (iii. 273) finds the *Geschichte der Amer. Urreligionen* (p. 577) of Müller to present a more thorough examination of the Quetzalcoatl myth than any other,[3] but since then it has been studied at length by Bandelier in his *Archæological Tour* (p. 170 etc.), and by Brinton in his *Amer. Hero Myths*, ch. 3.[4]

What Tylor (*Primitive Culture*, ii. 279) calls "the inexplicable compound, parthenogenetic deity, the hideous, gory Huitzilopochtli" (Huitziloputzli, Vitziliputzli), the god of war,[5] the protector of the Mexicans, was considered by Boturini (*Idea*, p. 60) as a deified ancient war-chief. Bancroft in his narrative (iii. 289, 294;

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[1] *Anales del Museo Nacional*, ii. 247; Bancroft, iii. 240, 248.

[2] Bandelier thinks Durán the earliest to connect St. Thomas with Quetzalcoatl. Cf. Bancroft, iii. 456.

[3] Müller agrees with Ixtlilxochitl that Quetzalcoatl and Huemac were one and the same, and that Ternaux erred in supposing them respectively Olmec and Toltec deities. Cf. Brasseur's *Palenqué*, 40, 66. Cf. D. Daly on "Quetzalcoatl, the Mexican Messiah" in *Gentleman's Mag.*, n. s., xli. 236.

[4] For the later views in general see Clavigero, Tylor, Brasseur (*Nations Civil.*, i. 253), Prescott (i. 62), Bancroft (iii. 248, 263; v. 24, 200, 255, 257), and Short (267, 274).

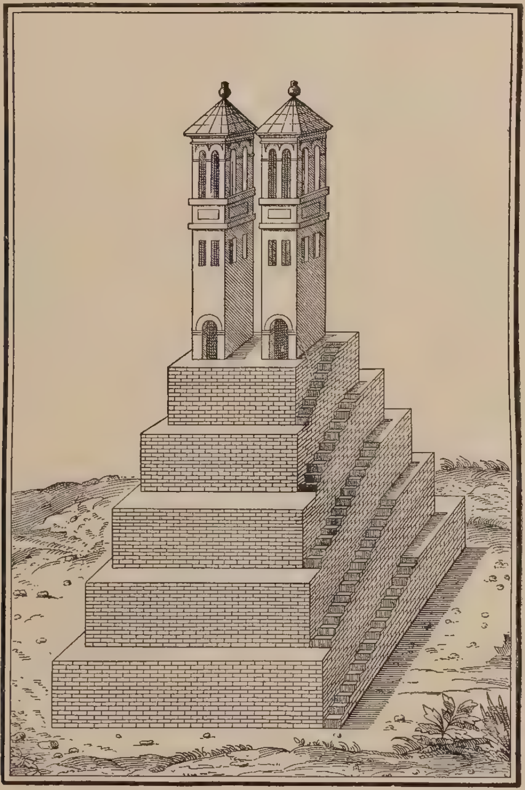
[5] The god Paynal was a sort of deputy war-god. See H. H. Bancroft's *Native Races*.

* After a drawing in Cumplido's Mexican ed. of Prescott's *Mexico*, vol. iii. Images of him are everywhere (Nadaillac, 273-74). Cf. Eng. transl. of Charnay, p. 87.

iv. 559) quotes the accounts in Sahagún and Torquemada, and (pp. 300–322) summarizes J. G. Müller's monograph on this god, which he published in 1847, and which he enlarged when including it in his *Urreligionen.*

Acosta's description of the Temple of Huitzilopochtli is translated in Bancroft (iii. 292). Solis follows Acosta, while Herrera copies Gomara, who was not, as Solis contends, so well informed.

As regards the Votan myth of Chiapas, Brinton tells us something in his *American Hero Myths* (212, with references, 215); but the prime source is the Tzendal manuscript used by Cabrera in his *Teatro Critico-Americano.*[1] No complete translation has been made, and the abstracts are unsatisfactory. Bancroft aids us in this study of worship in Chiapas (iii. 458), as also in that of Oajaca (iii. 448), Michoacan[2] (iii. 445), and Jalisco (iii. 447).



THE MEXICAN TEMPLE.*

"The religion of the Mayas," says Bancroft (iii. ch. 11), "was fundamentally the same as that of the Nahuas, though it differed somewhat in outward forms. Most of the gods were deified heroes. . . . Occasionally we find very distinct traces of an older sun-worship which has succumbed to later forms, introduced according to vague tradition from Anahuac." The view of Tylor (*Anahuac*, 191) is that the "civilization," and consequently the religions, of Mexico and Central America were originally independent, but that they came much into contact, and thus modified one another to no small extent."

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[1] Cf. references in *Peabody Mus. Rept.*, ii. 571; Short, p. 206.

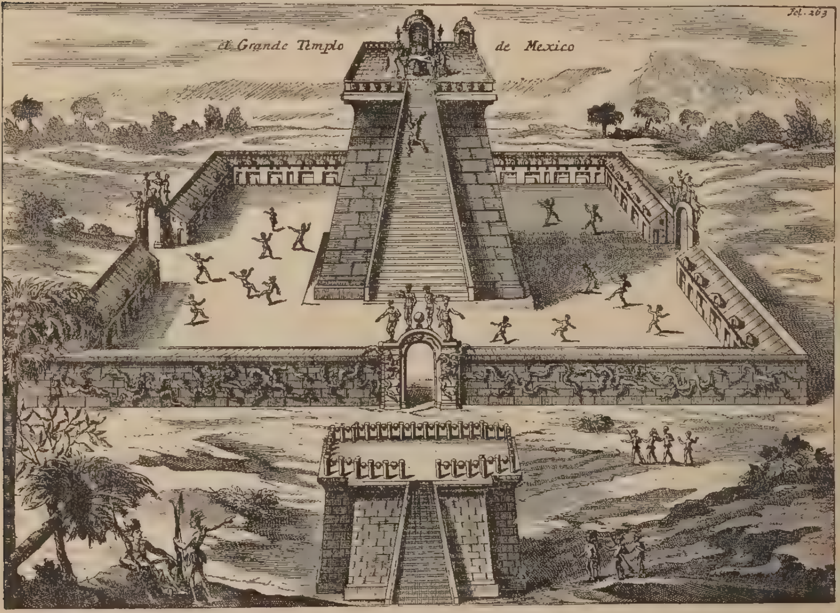
[2] Cf. *Relacion de las ceremonias y Ritos de Michoacan*, a manuscript in the library of Congress, of which there is a copy in Madrid, which is printed in the *Coleccion de doc. ined. para la hist. de España*, liii.

* Reduced from a drawing in Icazbalceta's *Coleccion de Documentos*, i. p. 384. There were two usual forms of the Mexican temple: one of this type, and the other with two niche-like pavilions on the top. Cf. drawings in Clavigero (Casena, 1780), ii. 26, 34; Eng. tr. by Cullen, i. 262, 373; Stevens's Eng. tr. Herrera (London, 1740, vol. ii.).

Modern scholars are not by any means so much inclined as Las Casas and the other Catholic fathers were to recognize the dogma of the Trinity and other Christian notions, which have been thought to be traceable in what the Maya people in their aboriginal condition held for faith.

The most popular of their deified heroes were Zamná and Cukulcan, not unlikely the same personage under two names, and quite likely both are correspondences of Quetzalcoatl. We can find various views and alternatives on this point among the elder and recent writers. The belief in community of attributes derives its strongest aid from the alleged disappearance of Quetzalcoatl in Goazacoalco just at the epoch when Cukulcan appeared in Yucatan. The centres of Maya worship were at Izamal, Chichen-Itza, and the island of Cozumel.

The hero-gods of the Mayas is the topic of Brinton's fourth chapter in his *American Hero Myths*, with views of their historical relations of course at variance with those of Bancroft. As respects the material, he says that "most unfortunately very meagre sources of information are open to us. Only fragments of their legends and hints of their history have been saved, almost by accident, from the general wreck of their civilization." The heroes are Itzamná, the leader of the first immigration from the east. through the ocean pathways; and Kukulcan, the conductor of the second from the west. For the first cycle of myths Brinton refers to Landa's *Relation*, Cogolludo's *Yucatan*, Las Casas's *Historia Apologética*, involving the reports of the missionary Francisco Hernandez, and to Hieronimo Roman's *De la Republica de las Indias Occidentales.*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THE TEMPLE OF MEXICO.*

The Kukulcan legends are considered by Brinton to be later in date and less natural in character, and Hernandez's Report to Las Casas is the first record of them. Brinton's theory of the myths does not allow him to identify the Quetzalcoatl and Kukulcan hero-gods as one and the same, nor to show that the Aztec and Maya civilizations had more correspondence than occasional intercourse would produce; but he thinks the similarity of the statue of "Chac Mool," unearthed by Le Plongeon at Chichen-Itza, to another found at Tlaxcala compels us to believe that some positive connection did exist in parts of the country (*Anales del Museo Nacional*, i. 270).[1] "The Nahua impress," says Bancroft (iii. 490), "noticeable in the languages and customs of Nicaragua, is still more strongly marked in the mythology. Instead of obliterating the older forms of worship, as it seems to have done in the northern parts of Central America, it has here and there passed by many of the distinct beliefs held by different tribes, and blended with the chief elements of a system which is traced to the Muyscas in South America."

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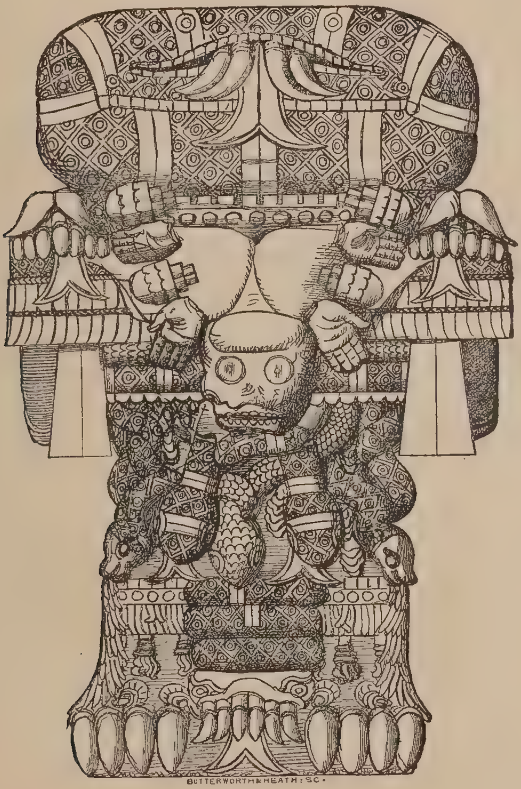
[1] For further modern treatment see Schultz-Sellack's "Die Amerikanischen Götter der vier Weltgegenden und ihre Tempel in Palenque" in *Zeitschrift für Ethnologie*, xi. (1879); Brasseur's *Landa*, p. lx; Ancona's *Yucatan* (i. ch. 10); Powell's *First Report Bureau of Ethnology*; for sacrifices, Nadaillac (p. 266); and for festivals and priestly service, Bancroft (ii. 689). For Yucatan folklore, see Brinton in *Folk-lore Journal* (vol. i. for 1883).

* After plate (reduced) in Herrera.

The main source of the Quiché myths and worship is the *Popul Vuh*, but Bancroft (iii. 474), who follows it, finds it difficult to make anything comprehensible out of its confusion of statement. But prominent among the deities seem to stand Tepeu or Gucumatz, whom it is the fashion to make the same with Quetzalcoatl, and Hurakan or Tohil, who indeed stands on a plane above Quetzalcoatl. Brinton (*Myths*, 156), on the contrary, connects Hurakan with Tlaloc, and seems to identify Tohil with Quetzalcoatl. Bancroft (iii. 477) says that tradition, name, and attributes connect Tohil and Hurakan, and identify them with Tlaloc.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TEOYAOMIQUI.[*]

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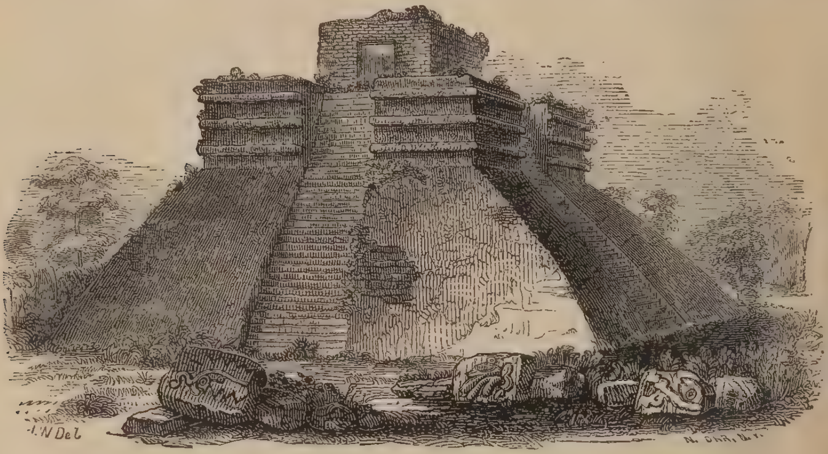
[*] The idol dug up in the Plaza in Mexico is here presented, after a cut, following Nebel, in Tylor's *Anahuac*, showing the Mexican goddess of war, or death. Cf. cut in *American Antiquarian*, Jan., 1883; Powell's *First Rept. Bur. Ethn.*, 232; Bancroft, iv. 512, 513, giving the front after Nebel, and the other views after Léon y Gama. Bandelier (*Arch. Tour*, pl. v) gives a photograph of it as it stands in the courtyard of the Museo Nacional.

Gallatin (*Am. Ethn. Soc. Trans.*, i. 338) describes Teoyaomiqui as the proper companion of Huitzilopochtli: "The symbols of her attributes are found in the upper part of the statue; but those from the waist downwards relate to other deities connected with her or with Huitzilopochtli." Tylor (*Anahuac*, 222) says: "The antiquaries think that the figures in it stand for different personages, and that it is three gods: Huitzilopochtli the god of war, Teoyaomiqui his wife, and Mictlantecutli the god of hell." Léon y Gama calls the statue Teoyaomiqui, but Bandelier, *Archæol. Tour*, 67, thinks its proper name is rather Huitzilopochtli. Léon y Gama's description is summarized in Bancroft, iii. 399, who cites also what Humboldt (*Vues*, etc., ii. 153, and his pl. xxix) says. Bancroft (iii. 397) speaks of it as "a huge compound statue, representing various deities, the most prominent being a certain Teoyaomiqui, who is almost identical with, or at least a connecting link between, the mother goddess" and Mictlantecutli, the god of Mictlan, or Hades. Cf. references in Bancroft, iv. 515.

Brinton's *Names of the gods in the Kiché myths, a monograph on Central American mythology* (Philad. Am. Philos. Soc., 1881), is a special study of a part of the subject.

Brinton (*Myths*, etc., 184) considers the best authorities on the mythology of the Muyscás of the Bogota region to be Piedrahita's *Historia de las Conquistas del Nuevo Reyno de Granada* (1668, followed by Humboldt in his *Vues*) and Simm's *Noticias historiales de las Conquistas de Tierra Firme en el Nuevo Reyno de Granada*, given in Kingsborough, vol. viii.

The mythology of the Quichuas in Peru makes the staple of chap. 5 of Brinton's *Amer. Hero-Myths*. Here the corresponding hero-god was Viracocha. Brinton depends mainly on the *Relacion Anónyma de los Costumbres Antiguos de los Naturales del Piru, 1615* (Madrid, 1879); on Christoval de Molina's account of the fables and religious customs of the Incas, as translated by C. R. Markham in the Hakluyt Society volume, *Narratives of the Rites and Laws of the Yncas* (London, 1873); on the *Comentarios reales* of Garcilasso de la Vega; on the report made to the viceroy Francisco de Toledo, in 1571, of the responses to inquiries made in different parts of the country as to the old beliefs which appear in the "Informacion de las idolatras de los Incas é Indios," printed in the *Coleccion de documentos ineditos del archivo de Indias*, xxi. 198; and in the *Relacion de Antigüedades deste Reyno del Piru*, by Juan de Santa Cruz Pachicuti.



ANCIENT TEOCALLI, OAXACA, MEXICO.*

Brinton dissents to D'Orbigny's view in his *L'homme Américaine*, that the Quichua religion is mainly borrowed from the older mythology of the Aymaras.

Francisco de Avila's "Errors and False Gods of the Indians of Huarochiri" (1608), edited by Markham for the Hakluyt Society in the volume called *Narratives of the Rites and Laws of the Yncas*, is a treatment of a part of the subject.

Adolf Bastian's *Ein Jahr auf Reisen — Kreuzfahrten zum Sammelbehuf aus Transatlantischen Feldern der Ethnologie*, being the first volume of his *Die Culturländer des Alten America* (Berlin, 1878), has a section "Aus Religion und Sitte des Alten Peru."

* After a cut in Squier's *Serpent Symbol*, p. 78.

VI.

ARCHÆOLOGICAL MUSEUMS AND PERIODICALS.

By the Editor.

THE oldest of existing American societies dealing with the scientific aspects of knowledge is the American Philosophical Society of Philadelphia, whose *Transactions* began in 1769, and made six volumes to 1809. A second series was begun in 1818.[1] What are called the *Transactions of the Historical and Literary Committee* make two volumes (1819, 1838), the first of which contains contributions by Heckewelder and P. S. Duponceau on the history and linguistics of the Lenni Lenape. Its *Proceedings* began in 1838. The American Academy of Arts and Sciences was instituted at Boston in 1780, a part of its object being "to promote and encourage the knowledge of the antiquities of America,"[2] and its series of *Memoirs* began in 1783,[3] and its *Proceedings* in 1846. These societies have only, as a rule, incidentally, and not often till of late years, illustrated in their publications the antiquities of the new world; but the American Antiquarian Society was founded in 1812 at Worcester, Mass., by Isaiah Thomas, with the express purpose of elucidating this department of American history. It began the *Archæologia Americana* in 1820, and some of the volumes are still valuable, though they chiefly stand for the early development by Atwater, Gallatin, and others of study in this direction. In the first volume is an account of the origin and design of the society, and this is also set forth in the memoir of Thomas prefixed to its reprint of his *History of Printing in America*, which is a part of the series. The *Proceedings* of the society were begun in 1849, and they have contained some valuable papers on Central American subjects. The Boston Society of Natural History[4] published the *Boston Journal of Natural History* from 1834 to 1863, and in 1866 began its *Memoirs*. Col. Whittlesey gave in its first volume a paper on the weapons and military character of the race of the mounds, and subsequent volumes have had other papers of an archæological nature; but they have formed a small part of its contributions. Its *Proceedings* have of late years contained some of the best studies of palæolithic man. The American Ethnological Society, founded by Gallatin (New York), began its exclusive work in a series of *Transactions* (1845–53, vols. i., ii., and one number of vol. iii.), but it was not of long continuance, though it embraced among its contributors the conspicuous names of Gallatin, Schoolcraft, Catherwood, Squier, Rafn, S. G. Morton, J. R. Bartlett, and others. Its *Bulletin* was not continued beyond a single volume (1860–61).[5] The society was suspended in 1871.

The American Association for the Advancement of Science began its publications with the *Proceedings* of its Philadelphia meeting in 1848. Questions of archæology formed, however, but a small portion of its inquiries[6] till the formation of a section on Anthropology a few years ago.

The American Geographical Society has published a *Bulletin* (1852–56); *Journal* (or *Transactions*) (1859), etc., and *Proceedings* (1862–64). Some of the papers have been of archæological interest.

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[1] *First series:* vol. iv., W. Sargent on articles from an old grave at Cincinnati, exhumed in 1794; vol. v., G. Turner on the same; vol. vi., W. Dunbar on the Indian sign language; J. Madison on remains of fortifications in the west; B. S. Barton on affinities of Indian words. *New series:* vol. i., H. H. Brackenridge on Indian populations and tumuli; C. W. Short on an Indian fort near Lexington, Ky.; vol. iii., D. Zeisberger on a Delaware grammar; vol. iv., J. Heckewelder on Delaware names, etc.

[2] It celebrated its centennial in 1880, when an impromptu address was delivered by R. C. Winthrop, which is printed by this society, and is also contained, with a statement of the occasion of it, in his *Speeches and Addresses*, 1878–1886. For a record of the interest in archæological studies about 1790, see *Reports* of the American Philosophical Society, xxii. no. 119.

[3] *First series:* vol. i., S. H. Parsons on discoveries in the western country; vol. iii., E. A. Kendall and J. Davis on an examination of the much controverted inscription of the so-called Dighton Rock; E. Stiles on an Indian idol. *New series:* vol. i., Rasle's Abenaki dictionary; vol. v., W. Sargent's plan of the Marietta mounds, etc.

[4] This society published the original edition of S. G. Morton's *Inquiry into the distinctive characteristics of the aboriginal race of America* (2d ed., Philadelphia, 1844), which glances at their moral and intellectual character, their habits of interment, their maritime enterprise, and their physical condition.

[5] Field's *Ind. Bibliog.*, no. 1564.

[6] Vol. ii., S. S. Haldeman on linguistic ethnology; vol. iii., J. C. Nott and L. Agassiz on the unity of the human race; vol. v., Col. Whittlesey on ancient human remains in Ohio; vol. vi., J. L. Leconte on the California Indians; vol. xi., Whittlesey on ancient mining at Lake Superior; Morgan on Iroquois laws of descent; D. Wilson on a uniform type of the American crania; vol. xiii., Morgan on the bestowing of Indian names; vol. xvii., Whittlesey on the antiquity of man in America; W. De Haas on the archæology of the Mississippi Valley; W. H. Dall on the Alaska tribes; vol. xix., Dall on the Eskimo tongue, etc.

The Anthropological Institute of New York printed its transactions in a *Journal* (one vol. only, 1872–73).

The Archæological Institute of America was founded in Boston in 1879, and has given the larger part of its interest to classical archæology. The first report of its executive committee said respecting the field in the new world: "The study of American archæology relates, indeed, to the monuments of a race that never attained to a high degree of civilization, and that has left no trustworthy records of continuous history. . . . From what it was and what it did, nothing is to be learned that has any direct bearing on the progress of civilization. Such interest as attaches to it is that which it possesses in common with other early and undeveloped races of mankind." Appended to this report was Lewis H. Morgan's "Houses of the American Aborigines, with suggestions for the exploration of the ruins in New Mexico," etc., — advancing his well-known views of the communal origin of the southern ruins. Under the auspices of the Institute, Mr. A. F. Bandelier, a disciple of Morgan, was sent to New Mexico for the study of the Pueblos, and his experiences are described in the second *Report* of the Institute. In their third *Report* (1882) the committee of the Institute say: "The vast work of American archæology and anthropology is only begun. . . . Other nations, with more or less of success, are trying to do our work on our soil. It is time that Americans bestir themselves in earnest upon a field which it would be a shame to abandon to the foreigner." Still under the pay of the Institute, Mr. Bandelier, in 1881, devoted his studies to the remains at Mexico, Cholula, Mitla, and the ancient life of those regions. At the same time, Aymé, then American consul at Merida, was commissioned to explore certain regions of Yucatan, but the results were not fortunate.

The Institute began in 1881 the publication of an *American Series* of its *Papers*, the first number of which embodied Bandelier's studies of the Pueblos, and the second covered his Mexican researches. In 1885 the *American Journal of Archæology* was started at Baltimore as the official organ of the Institute, and occasional papers on American subjects have been given in its pages. The editors were called upon to define more particularly their relations to archæology in America in the number for Sept., 1888. In this they say: "The archæology of America is busied with the life and work of a race or races of men in an inchoate, rudimentary, and unformed condition, who never raised themselves, even at their highest point, as in Mexico and Peru, above a low stage of civilization, and never showed the capacity of steadily progressive development. . . . These facts limit and lower the interest which attaches . . . to crude and imperfect human life. . . . A comparison of their modes of life and thought with those of other races in a similar stage of development in other parts of the world, in ancient and modern times, is full of interest as exhibiting the close similarity of primitive man in all regions, resulting from the sameness of his first needs, in his early struggle for existence." The editors rest their reasons for giving prominence to classical archæology upon the necessity of affording by such complemental studies the means of comparison in archæological results, which can but advance to a higher plane the methods and inductions of the prehistoric archæology of America.

The American Folk-Lore Society was founded in Jan., 1888, and *The Journal of American Folk-Lore* was immediately begun. A large share of its papers is likely to cover the popular tales of the American aborigines.

The Anthropological Society of Washington is favorably situated to avail itself of the museums and apparatus of the American government, and members of the Geological Survey and Ethnological Bureau have been among the chief contributors to its *Transactions*,[1] which in January, 1888, were merged in a more general publication, *The American Anthropologist*. A National Geographic Society was organized in Washington in 1888.

There are numerous local societies throughout the United States whose purpose, more or less, is to cover questions of archæological import. Those that existed prior to 1876 are enumerated in Scudder's *Catalogue of Scientific Serials*; but it was not easy always to draw the line between historical associations and those verging upon archæological methods.[2]

The oldest of the scientific periodicals in the United States to devote space to questions of anthropology is Silliman's *American Journal of Science and Arts* (1818, etc.). The *American Naturalist*, founded in 1867, also entered the field of archæology and anthropology. The same may be said in some degree of the *Popular*

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[1] *Abstracts of the Transactions prepared by J. W. Powell* (Washington, 1879, etc.).

[2] The student will find some general help, at least, from the publications of such as these: the Peabody Academy of Science (Salem, Mass.), *Memoirs*, 1869, etc.; Essex Institute (Salem, Mass.), *Bulletin*, 1869, and *Proceedings*, 1848, etc.; Connecticut Academy of Arts and Sciences, *Memoirs*, 1810–16; *Transactions*, 1866, etc.; the Lyceum of Natural History, become in 1876 the New York Academy of Sciences, *Annals*, 1823, etc.; *Proceedings*, 1870, etc.; *Transactions;* the Numismatic and Antiquarian Society of Philadelphia, *Proceedings;* Wyoming Historical and Geological Society, *Proceedings and Collections* (Wilkesbarre, Pa., 1884, etc.); the Cincinnati Society of Natural History, *Journal* and *Proceedings*, 1876; Indianapolis Academy of Sciences, *Transactions*, 1870, etc.; Wisconsin Academy of Sciences, Arts and Letters, *Bulletin*, 1870, and *Transactions*, 1870; Davenport (Iowa) Academy of Science, *Proceedings*, 1867; St. Louis Academy of Science, *Transactions*, 1856; Kansas Academy of Science, *Transactions*, 1872; California Academy of Sciences, *Proceedings*, 1854, etc., and *Memoirs*, 1868, etc.; Geographical Society of the Pacific, its official organ *Kosmos*, — not to name others.

In British America we may refer to the Natural History Society of Montreal, publishing *The Canadian Naturalist*, 1857, etc.; the Canadian Institute, *Proceedings;* the Royal Society of Canada, *Proceedings;* the Nova Scotia Institute of Natural Science, *Proceedings and Transactions*, 1867, — not to mention others; and among periodicals the *Canadian Monthly*, the *Canadian Antiquarian*, and the *Canadian Journal.*

Science Monthly (1877, etc.), *Science* (1883), and the *Kansas City Review*. The chief repository of such contributions, however, since 1878, has been *The American Antiquarian* (Chicago), edited by Stephen D. Peet. Its papers are, unluckily, of very uneven value.[1]

The best organized work has been done in the United States by the Peabody Museum of American Archæology and Ethnology, in Cambridge, Mass., and by certain departments of the Federal government at Washington.

The Peabody Museum resulted from a gift of George Peabody, an American banker living in London, who instituted it in 1866 as a part of Harvard University.[2] It was fortunate in its first curator, Dr. Jeffries Wyman, who brought unusual powers of comprehensive scrutiny to its work.[3] He died in 1874, and was succeeded by one of his and of Agassiz's pupils, Frederick W. Putnam, who was also placed in the chair of archæology in the university in 1886. The *Reports*, now twenty-two in number, and the new series of *Special Papers* are among the best records of progress in archæological science.

The creation of the Smithsonian Institution in 1846, under the bequest of an Englishman, James Smithson, and the devotion of a sum of about $31,000 a year at that time arising from that gift, first put the government of the United States in a position "to increase and diffuse knowledge among men."[4]

The second *Report* of the Regents in 1848 contains approvals of a manuscript by E. G. Squier and E. H. Davis, which had been offered to the Institution for publication, and which had been commended by Albert Gallatin, Edward Robinson, John Russell Bartlett, W. W. Turner, S. G. Morton, and George P. Marsh. Thus an important archæological treatise, *The Ancient Monuments of the Mississippi Valley, comprising the results of extensive original surveys and explorations* (Washington, 1848), became the first of the *Smithsonian Contributions to Knowledge.* The subsequent volumes of the series have contained other important treatises in similar fields. Foremost among them may be named those of Squier on the *Aboriginal Monuments of New York* (vol. ii., 1851); Col. Whittlesey on *The Ancient Works in Ohio* (vol. iii., 1852); S. R. Riggs' *Dakota Grammar and Dictionary* (vol. iv., 1852); I. A. Lapham's *Antiquities of Wisconsin* (vol. vii., 1855); S. F. Haven's *Archæology of the United States* (vol. viii., 1856); Brantz Mayer's *Mexican History and Archæology* (vol. ix., 1857); Whittlesey on *Ancient Mining on Lake Superior* (vol. xiii., 1863); Morgan's *Systems of Consanguinity of the human family* (vol. xvii., 1871); — not to name lesser papers. To supplement this quarto series, another in octavo was begun in 1862, called *Miscellaneous Collections;* and in this form there have appeared J. M. Stanley's *Catalogue of portraits of No. Amer. Indians* (vol. ii., 1862); a *Catalogue of photographic portraits of the No. Amer. Indians* (vol. xiv., 1878).

Of much more interest to the anthropologist has been the series of *Annual Reports* with their appended papers, — such as Squier on *The Antiquities of Nicaragua* (1851); W. W. Turner on *Indian Philology* (1852); S. S. Lyon on *Antiquities from Kentucky* (1858), and many others.

The sections of correspondence and minor papers in these reports soon began to include communications about the development of archæological research in various localities. They began to be more orderly arranged under the sub-heading of Ethnology in the *Report* for 1867, and this heading was changed to Anthropology in the *Report* for 1879. Charles Rau (d. 1887) had been a leading contributor in this department, and no. 440 of the Smithsonian publications was made up of his *Articles on Anthropological Subjects, contributed from 1863 to 1877* (Washington, 1882). No. 421 is Geo. H. Boehmer's *Index to Anthropological Articles in the publications of the Smithsonian Institution* (Washington, 1881). Among the later papers those of O. T. Mason of the Anthropological Department of the National Museum are conspicuous.

The last series is the *Reports of the Bureau of Ethnology*, placed by Congress in the charge of the Smithsonian. The *Reports of the American Historical Association* will soon be begun under the same auspices.

Major J. W. Powell, the director of the Bureau of Ethnology, said that its purpose was "to organize anthropologic research in America."[5] It published its first report in 1881, and this and the later reports have had for contents, beside the summary of work constituting the formal report, the following papers: —

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[1] The tendency of general periodicals to questions of this kind is manifest by the references in *Poole's Index*, under such heads as American Antiquities, Anthropology, Archæology, Caves and Cave-dwellers, Ethnology, Lake Dwellings, Man, Mounds and Moundbuilders, Prehistoric Races, etc.

[2] The history of its incipiency and progress can be gathered from the *Reports* of the Museum, with summaries in those numbered i., xi. and xix.

[3] Cf. Waldo Higginson's *Memorials of the Class of 1833, Harvard College*, p. 60, and the contemporary tributes from eminent associates noted in *Poole's Index*, p. 1434.

[4] The documentary history, by W. J. Rhees, of the Smithsonian Institution, forms vol. xvii. of its *Miscellaneous Collections.* Cf. J. Henry on its organization in the *Proceedings* of the Amer. Asso. for the Adv. of Science, vol. i. A *Catalogue of the publications of the S. I. with an alphabetical index of articles*, by William J. Rhees (Washington, 1882), constitutes no. 478 of its series. The early management of the Smithsonian decided that the "knowledge" of its founder meant science, and from the start gave not a little attention to archæology as a science. When the Bureau of Ethnology became a part of the Institution, and its *Reports* included papers necessarily historical as well as archæological, the way was prepared for a broader meaning to the term "knowledge," and as a significant recognition of the allied field of research the present government of the Smithsonian gave hearty concurrence to the act of Congress which in Dec., 1888, made also the American Historical Association, which had existed without incorporation since 1884, a section of the Smithsonian Institution.

[5] Its mound explorations have been conducted by Cyrus Thomas; those among the Pueblos of the southwest by James Stevenson (d. 1888); while Major Powell himself has controlled personally the body of searchers in the linguistic fields (*American Antiquarian*, viii. 32). It would seem that its profession "to organize anthropological re-

Vol. i.: J. W. Powell. The evolution of language. — Sketch of the mythology of the North American Indians. — Wyandot government. — On limitations to the use of some anthropologic data. — H. C. Yarrow. A further contribution to the study of mortuary customs among the North American Indians. — E. S. Holden. Studies in Central American picture-writing. — C. C. Royce. Cessions of land by Indian tribes to the United States: illustrated by those in Indiana. — G. Mallery. Sign language among North American Indians compared with that among other peoples and deaf-mutes. — J. C. Pilling. Catalogue of linguistic manuscripts in the library. — Illustration of the method of recording Indian languages. From the manuscripts of J. O. Dorsey, A. S. Gatschet, and S. R. Riggs.

Vol. ii.: F. H. Cushing. Zuñi fetiches. — *Mrs.* E. A. Smith. Myths of the Iroquois. — H. W. Henshaw. Animal carvings from mounds of the Mississippi Valley. — W. Matthews. Navajo silversmiths. — W. H. Holmes. Art in shell of the ancient Americans. — J. Stevenson. Illustrated catalogue of the collections obtained from the Indians of New Mexico and Arizona in 1879; — Illustrated catalogue of the collections obtained from the Indians of New Mexico in 1880.

Vol. iii.: Cyrus Thomas. Notes on certain Maya and Mexican manuscripts. — W. (C.) H. Dall. On masks, labrets, and certain aboriginal customs, with an inquiry into the bearing of their geographical distribution. — J. O. Dorsey. Omaha sociology. — Washington Matthews. Navajo weavers. — W. H. Holmes. Prehistoric textile fabrics of the United States, derived from impressions on pottery; — Illustrated catalogue of a portion of the collections made by the Bureau of Ethnology during the field season of 1881. — James Stevenson. Illustrated catalogue of the collections obtained from the Pueblos of Zuñi, New Mexico, and Wolpi, Arizona, in 1881.

Vol. iv.: Garrick Mallery. Pictographs of the North American Indians. — W. H. Holmes. Pottery of the ancient Pueblos; — Ancient pottery of the Mississippi Valley; — Origin and development of form and ornament in ceramic art. — F. H. Cushing. A study of Pueblo pottery as illustrative of Zuñi culture growth.

Vol. v.: Cyrus Thomas. Burial mounds of the northern sections of the United States. — C. C. Royce. The Cherokee nation of Indians. — Washington Matthews. The Mountain Chant: a Navajo ceremony. — Clay MacCauley. The Seminole Indians of Florida. — *Mrs.* Tilly E. Stevenson. The religious life of the Zuñi child.

What is known as the United States National Museum is also in charge of the Smithsonian Institution,[1] and here are deposited the objects of archæological and historical interest secured by the government explorations and by other means. The linguistic material is kept in the Bureau of Ethnology. The skulls and physiological material, illustrative of prehistoric times, are deposited in the Army Medical Museum, under the Surgeon-General's charge.

Major Powell, while in charge of the Geographical and Geological Survey of the Rocky Mountain Region, had earlier prepared five volumes of *Contributions to Ethnology*, all but the second of which have been published. The first volume (1877) contained W. H. Dall's "Tribes of the Extreme Northwest" and George Gibbs' "Tribes of Western Washington and Northwestern Oregon." The third (1877): Stephen Powers' "Tribes of California." The fourth (1881): Lewis H. Morgan's "Houses and house life of the American Aborigines." The fifth (1882): Charles Rau's "Lapidarian sculpture of the Old World and in America," Robert Fletcher's "Prehistoric trephining and cranial Amulets," and Cyrus Thomas on the Troano Manuscript, with an introduction by D. G. Brinton.

Among the *Reports* of the geographical and geological explorations and surveys west of the 100th meridian conducted by Capt. Geo. M. Wheeler, the seventh volume, *Report on Archæological and Ethnological Collections from the vicinity of Santa Barbara, California, and from ruined pueblos of Arizona and New Mexico and certain Interior Tribes* (Washington, 1879), was edited by F. W. Putnam, and contains papers on the ethnology of Southern California, wood and stone implements, sculptures, musical instruments, beads, etc.; the Pueblos of New Mexico, their inhabitants, architecture, customs, cliff houses and other ruins, skeletons, etc.; with an *Appendix* on Linguistics, containing forty Vocabularies of Pueblo and other Western Indian Languages and their classification into seven families.

The *Reports* of the Geological and Geographical Survey of the Territories, under the charge of F. V. Hayden, brought to us in those of 1874–76 the knowledge of the cliff-dwellers, and they contain among the miscellaneous publications such papers as W. Matthews' *Ethnography and Philology of the Hidatsa Indians* and W. H. Jackson's *Descriptive Catalogue of photographs of No. Amer. Indians.*

There are other governmental documents to be noted: *The Exploration of the Red River of Louisiana in 1852*, by R. B. Marcy and G. B. McClellan (Washington, 1854), contains a vocabulary of the Comanches and Witchitas, with some general remarks by W. W. Turner. There is help to be derived from the geographical details, and from something on ethnology, in the *Reports of Explorations and Surveys for a Railroad from the Mississippi River to the Pacific Ocean* (Washington, 1856–60, in 12 vols.); in W. H. Emory's *Report on the United States and Mexican Boundary Survey* (Washington, 1857–58, in 2 vols.); J. H. Simpson's *Report of Explorations across the great basin of the territory of Utah in 1859* (Washington, 1876); J. N. Macomb's *Report of the Exploring Expedition from Santa Fé to the Junction of the Grand and Green Rivers of the Great Colorado of the West in 1859* (Washington, 1876).

There were also published, under the auspices of the government, the conglomerate and very unequal work of

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search" is not to its full extent true, since the physiological side of the subject seems to be left in Washington to the Army Medical Museum.

[1] Cf. Charles Rau's *Archæological Collections of the United States National Museum* (1876) in *Smithsonian Contributions*, xx., with many illustrative woodcuts; and a paper by Ernest Ingersoll in *The Century*, January, 1885. Cf. also F. W. Putnam's contribution on American Archæological Collections in the *American Naturalist*, vii. 29.

Henry R. Schoolcraft, *Historical and Statistical Information respecting the history, conditions, and prospects of the Indian Tribes of the United States, collected and prepared under the direction of the Bureau of Indian Affairs* (Philad., 1851–57, in 6 vols., with a trade edition of the same date). An act of Congress (March 3, 1847) authorized its publication. As reissued it is called *Archives of aboriginal knowledge, containing original papers laid before Congress, respecting the Indian tribes of the United States* (Philadelphia, 1860, '68, 6 vols.). It has the following divisions: General history. — Manners and customs. — Antiquities. — Geography. — Tribal organization, etc. — Intellectual capacity. — Topical history. — Physical type. — Language. — Art. — Religion and mythology. — Demonology, magic, etc. — Medical knowledge. — Condition and prospects. — Statistics and population. — Biography. — Literature. — Post-Columbian history. — Economy and statistics. An edition of vols. 1–5 (1856) is called *Ethnological researches respecting the Red Men of America, Information respecting the history*, etc. The sixth volume is in effect a summary of the preceding five.[1]

At a recent meeting of the American Association for the Advancement of Science, a committee was charged with preparing a memorial to Congress, urging action to insure the preservation of certain national monuments. There is a summary of their report in *Science*, xii. p. 101.

Of all European countries, the most has been done in France, by way of periodical system and corporate organizations, to advance the study of American anthropology, ethnology, and archæology. The *Annales des voyages, de la géographie et de l'histoire, traduits de toutes les langues Européennes; des relations originales, inédites*,[2] the publication of which was begun by Malte-Brun in 1808 and continued to 1814, and the *Nouvelles Annales des Voyages*, begun in 1819 and continued with a slightly varying title till 1870, are sources occasionally of much importance. At a later day, Edouard Lartet and others have used the *Annales des Sciences Naturelles* as a medium for their publications. We hardly trace here, however, any corporate movement before the institution of the Société de Géographie de Paris in 1820. In 1824 it issued the first volume of its *Recueil de Voyages et de Mémoires*, which reached seven volumes in 1864, and had included (vol. ii.) an account of Palenqué and the researches of Warden on the antiquities of the United States. Since this society began the issue of its *Bulletin* in 1827, it has occasionally given assistance in the study of American archæology.

The earliest distinctive periodical on the subject was the *Revue Américaine*, of which, in 1826–27, three volumes, in monthly parts, were published in Paris.[3] In 1857 a movement was inaugurated which engaged first and last the coöperation of some eminent scholars in these studies, like Aubin, Buschmann, V. A. Malte-Brun, Abbé Brasseur de Bourbourg, Jomard, Alphonse Pinart, Cortambert, Léon de Rosny, Waldeck, Abbé Domenech, Charencey, etc. The active movers were first known as the Comité d'Archéologie Américaine, and they issued an *Annuaire* (1863–67) and one volume, at least, of *Actes* (1865), as well as a collection of *Mémoires sur l'archéologie Américaine* (1865). This organization soon became known as the Société Américaine de France, and under the auspices of this name there has been a series of publications of varying designation.[4] Its *Annuaire* began in 1868, and has been continued. The general name of *Archives de la Société Américaine de France* covers its other publications, which more or less coincide with the *Revue Orientale et Américaine par Léon de Rosny*, the first series of which appeared in Paris in 10 vols., in 1859–65, followed by a second, the first volume of which (vol. xi. of the whole) is called *Revue Américaine, publié sous les auspices de la Société d'Ethnographie et du Comité d'Archéologie Américaine*, and is at the same time the fourth volume of the *Actes de la Société d'Ethnographie Américaine et Orientale*. The whole series is sometimes cited as the *Mémoires de la Société d'Ethnographie*.[5] The series, already referred to, of the *Archives de la Soc. Amér. de France* is made up thus: Première série: vol. i., *Revue Orientale et Américaine*; ii., *Revue Américaine*; iii. and iv., *Revue Orientale et Américaine*.[6] The nouvelle série has no sub-titles, and the three volumes bear date 1875, 1876, 1884.

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[1] B. P. Poore's *Descriptive Catal. Govt. Pub.*, p. 593; Field's *Ind. Bibliog.*, no. 1379; Allibone's *Dictionary*, iii. p. 1952, for references and opposing criticisms. Some of the condemnation of the book is too sweeping, for amid its ignorance, confusion, and indiscrimination there is much to be picked out which is of importance. Cf. Parkman's *Jesuits*, p. lxxx; Wilson's *Prehistoric Man*, ii. ch. 19; Brinton's *Myths*, p. 40. Cf. on Schoolcraft's death (with a portrait) *Historical Mag.*, April, 1865; *Amer. Antiq. Soc. Proc.*, April, 1865.

F. S. Drake's *Indian Tribes of the United States* (Philad., 1884) is, with some additional matter, a rearrangement of Schoolcraft, the omission to acknowledge which on the title-page being an unworthy bibliographical deceit. Schoolcraft's rivalry of Geo. Catlin and his ignoring of Catlin's work is commented on at some length by Donaldson in the *Smithsonian Inst. Report*, 1885, part ii. pp. 373–383.

[2] For full details of this and other publications mentioned in this paper, see S. H. Scudder's *Catalogue of Scientific Serials, 1633–1876*, published by the library of Harvard University in 1879.

[3] Sabin, xvii., no. 70354. The Congrès Archéologique de France began its Séances générales in 1834, but the interest of its *Comptes rendus* for Americanists is for comparative illustration. The two volumes of *Mémoires de la Société Ethnologique* (Paris, 1841–45) contain nothing bearing directly on American archæology. Much the same may be said of the *Annales Archéologiques fondées par Didron aîné*, in 1844, and continued to 1870; of the *Bulletin Archéologique* (1844–46) of the Athénæum Français, and of its continuation, the *Bulletin Archéologique Français* (1846–56); and of the *Annales* of the Institut Archéologique (1844, etc.).

[4] *Am. Antiq. Soc. Proc.*, April, 1876.

[5] A *Revue Ethnographique* was begun in 1869. A Société Ethnologique, publishing *Bulletin* (1846–47) and *Mémoires* (1841–45), is a distinct organization.

[6] S. H. Scudder, in his *Catalogue of Scientific Serials*, no. 1528, endeavors to put into something like orderly

The student of comparative anthropology will resort to the *Materiaux pour l'histoire positive et philosophique* (later *primitive et naturelle*) *de l'homme*, the publication of which was begun at Paris in 1864 by Gabriel de Mortillet, and has been continued by Trutot, Cartailhac, Chautre, and others. This publication has contained abstracts of the proceedings of an annual gathering in Paris, whose *Comptes rendu* have been printed at length as of the *Congrès international d'anthropologie et d'archéologie préhistoriques* (1865, etc.).[1]

Léon de Rosny published but a single volume of a projected series, *Archives paléographiques de l'Orient et de l'Amérique* (Paris, 1870-71), which contains some papers on Mexican picture-writing. Rosny and others, who had been active in the movement begun by the Comité d'Archéologie Américaine, were now instrumental in organizing the periodical gathering in different cities of Europe, which is known as the *Congrès international des Américanistes.* The first session was held at Nancy in 1875, and its *Compte Rendu* was published in two volumes (Nancy and Paris, 1876). The second meeting was at Luxembourg in 1877 (*Compte Rendu*, Paris, 1878, in 2 vols.); the third at Brussels in 1879 (*Compte Rendu*); the fourth at Madrid in 1881 (*Congreso internacional de Américanistas. Cuarta reunion*, Madrid, 1881); the fifth at Copenhagen (*Compte Rendu*, Copenhagen, 1884); and others at Chalons-sur-Marne, Turin, and Berlin. The papers are printed in the language in which they were read.

The *Mémoires de la Société d'Ethnographie* (founded in 1859) began to appear in 1881, and its third volume (1882) is entitled *Les Documents écrits de l'Antiquité Américaine, compte rendu d'une mission scientifique en Espagne et en Portugal, par Léon de Rosny, avec une carte et 10 planches.* The fourth volume is P. de Lucy-Fossarieu's *Ethnographie de l'Amérique Antarctique* (Paris, 1884). In the second volume of a new series there is an account by V. Devaux of the work in American ethnology done by Lucien de Rosny as a preface to a posthumous work[2] of Lucien de Rosny, *Les Antilles, étude d'Ethnographie et d'Archéologique Américaines* (Paris, 1886).

Latterly there has been a consolidation of interests among kindred societies under the name of Institution Ethnographique, whose initial *Rapport annuel sur les récompenses et encouragements décernés en 1883* was published at Paris in 1883. This society now comprises the Société d'Ethnographie, Société Américaine de France, Athénée Oriental, and Société des Etudes Japonaises.

In England, organized efforts for the record of knowledge began with the creation of the Royal Society, though certain sporadic attempts had earlier been known. America was represented among its founders in the younger John Winthrop, and Cotton Mather was a contributor to its transactions, and there has occasionally been a paper in its publications of interest to American archæologists.[3] The Society of Antiquaries began to print its *Archæologia* in 1779 and its *Proceedings* in 1848, and the American student finds some valuable papers in them. The British Association for the Advancement of Science began its *Reports* with the meeting of 1831, and it has had among its divisions a section of anthropology. In 1830 the Royal Geographical Society began its *Journal* with a preliminary issue (1830-31, in 2 vols.), though its regular series first came out in 1832. Its *Proceedings* appeared in 1855, and both publications are a conspicuous source in many ways relating to early American history.[4] Closely connected with its interest has been the publication begun under the editing of C. R. Markham, and called successively *Ocean Highways* (1869-73, vol. i.-v.), with an added title of *Geographical Review* (1873-74), and lastly as *The Geographical Magazine* (vol. i.-iii., 1874-76).

The Ethnological Society published four volumes of a *Journal*[5] between 1844 and 1856, and resuming published two more volumes in 1869-70. Its contents are mainly of interest in comparative study, though there are a few American papers, like D. Forbes's on the Aymara Indians of Peru. This society's *Transactions* was issued in two volumes, 1859-60; and again in seven volumes, 1861-69.

Meanwhile, some gentlemen, not content with the restricted field of the Ethnological Society, founded in London an Anthropological Society, which began the publication of *Memoirs* (1863-69, in 3 vols.); and in this publication Bollaert issued his papers on the population of the new world, on the astronomy of the red man, on American paleography, on Maya hieroglyphics, on the anthropology of the new world, on Peruvian graphic records, — not to name other papers by different writers. The *Transactions* and *Journal* of the society, as well as the *Popular Magazine of Anthropology* (1866), made part in one form or another of the *Anthropological Review*, begun in 1863, and discontinued in 1870, when the *Journal of Anthropology* succeeded, but ceased the next year. The *Proceedings* of the society make one volume, 1873-75, under the title of *Anthropologia*, and the society also maintained a series of translations of foreign treatises, the first of which

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arrangement the exceedingly devious devices of duplication of this and allied publications.

[1] A *Revue d'Anthropologie* was begun at Paris, under the direction of Broca, in 1872. A Société d'Anthropologie began two series, *Bulletins* and *Mémoires*, in 1860. Mortillet conducted *L'Homme* from 1883 to 1887, when he and his associates in this work suspended its publication to devote themselves to a *Dictionnaire des Sciences Anthropologiques* and to a *Bibliothèque Anthropologique.*

[2] Rosny died April 23, 1871.

[3] Its publications began in 1665. Cf. synopsis in Scudder's *Catalogue*, pp. 26-27. Cf. C. A. Alexander on the origin and history of the Royal Society, in *Smithsonian Rept.*, 1863.

[4] Some of the local societies deal to some extent in American subjects; *e. g.*, the *Journal of the Manchester Geographical Society*, begun in 1885.

[5] Not to be confounded with *The Ethnological Journal*, vol. i., 1848-49, and vol. ii., 1854, incomplete; and *The Ethnological Journal*, 1 vol., 1865-66.

was Theodor Waitz's *Introduction to Anthropology*, ed. from the German by J. F. Collingwood (1863); and this was followed by a version by James Hunt, the president of the society, of Professor Carl Vogt's *Lectures on Man, his place in Creation and in the history of the Earth* (1864), and by other works of Broca, Pouchet, Blumenbach, etc.

What is known as the Anthropological Institute of Great Britain and Ireland united some of these separate endeavors and began its *Journal* in 1871. The *Quarterly Journal of the Geological Society* has also at times been the channel by which some of the leading anthropologists have published their views, and a few papers of archæological import have been given in the *Transactions* (1884, etc.) of the Royal Historical Society. Professedly broader relations belong to the *Transactions* (*Comptes rendus*) of the International Congress of prehistoric (anthropology and) archæology, which began its sessions in 1866.[1] The latest summary is the *Archæological Review, a journal of historic and prehistoric antiquities*, edited by G. L. Gomme, of which the first number appeared in March, 1888, which has for a main feature a bibliographical record of past and current archæological literature.[2]

It is, however, in the volumes of the Hakluyt Society's publications, beginning in 1847, in the annotated reprint of the early writers on American nations and on the European contact with them, that the most signal service has been done in England to the study of the early history of the new world. They are often referred to in the present History.

In Germany a *Magazin für die Naturgeschichte des Menschen* was published at Zittau as early as 1788–1791.

Wagner published at Vienna, in 1794–96, two volumes of *Beiträge zur philosophischen Anthropologie*; and Heynig's *Psychologisches* (*zugleich Anthropologisches*) *Magazin* was published at Altenburg in 1796–97.

The Berliner Akademie der Wissenschaft began its *Abhandlungen* in 1804, but it was not till long after that date that Buschmann and others used it as a channel of their views.

Vertuch's *Archiv für Ethnographie und Linguistik* (Weimar, 1807) only reached a single number.

The *Zeitschrift für physische Aerzte*, which was published by Nasse, at Leipzig, 1818–22, was succeeded by the *Zeitschrift für die Anthropologie* (Leipzig, 1823–24), and this was followed by a single volume, *Jahrbücher für Anthropologie* (Leipzig, 1830).

Bran's *Ethnographisches Archiv* was published at Jena from 1818 to 1829.

It was not till after 1860 that the new interest began to manifest itself, though Fechner's *Centralblatt für Naturwissenschaften und Anthropologie* was published at Leipzig in 1853–54.

Ecker's *Archiv für Anthropologie* was published at Braunschweig in 1866–68, which came in 1870 under the direction of the Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgeschichte, which also began a *Correspondenzblatt* in 1870, and a series, *Allgemeine Versammlung*, in 1873. This is the most important of the German societies.

Bastian's *Zeitschrift für Ethnologie* was begun at Berlin in 1869, and later added a *Supplement*.

The Anthropologische Gesellschaft of Vienna began its *Mittheilungen* in 1870; and in 1887 the Prähistorische Commission of the Kais. Akad. der Wissenschaften at Vienna printed the first number of its *Mittheilungen*.

The *Verein für Anthropologie* in Leipzig published but a single number of a *Bericht* in 1871.

The Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte continued its *Verhandlungen* for 1871–72 only; and the Göttinger Anthropologischer Verein made but a bare beginning (1874) of its *Mittheilungen*.

The *Bericht* of the Museum für Völkerkunde was begun in Leipzig in 1874.

The Münchener Gesellschaft für Anthropologie, Ethnologie und Urgeschichte began the publication of *Beiträge* in 1876.

In all these publications there have been papers interesting to American archæologists, if only in a comparative way, and at times American subjects have been frequent, especially in later years. The publications of zoölogical and geographical societies have in some respects been at times of equal interest, but it has not been thought worth while to enumerate them.[3]

The Königliche Museum at Berlin has a considerable collection of American antiquities, which has been fostered by Humboldt and others, and the ethnological department has made some important publications like those relating to *Amerika's Nordwestküste*.[4]

Waitz in his *Anthropologie der Naturvölker* (vol. iii.; *Die Amerikaner*, Th. i., Leipzig, 1862) has enumerated the literature of American anthropology upon which he depended.

The interest in most of the other European countries is more remotely American. The Museum of Ethnography at St. Petersburg is not without some objects of interest.[5]

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[1] Cf. J. R. Bartlett on an Antwerp meeting, in *Amer. Antiq. Soc. Proc.*, 1868.

[2] Such periodicals as *Nature* and *Popular Science Review* show how anthropological science is attracting attention.

[3] See Scudder's *Catalogue*.

[4] The third volume of Bastian's *Culturländer des Alten America* (Berlin, 1886) comprises "Nachträge und Ergänzungen aus den Sammlungen des Ethnologischen Museums."

[5] *Congrès des Américanistes*, *Compte Rendus*, Nancy, ii. 271.

In Sweden the Antropologiska Sällskapet of Stockholm began a *Tidsskrift* in 1875; but it affords little assistance to the Americanist except in comparative study.[1]

The student will find some suggestions in a little tract by J. J. A. Worsaae, *De l'organisation des musées historico-archéologiques dans le Nord et ailleurs. Traduit par E. Beauvois* (Copenhagen, 1885), which is extracted from the *Mémoires de la société royale des antiquaires de Nord, 1885.*

There has begun recently in Leyden an *Internationales Archiv für Ethnographie. Herausg. von Krist. Bahnson, Guido Cora* [*etc.*] (Leiden, 1888).

In Italy the *Archivio per l'Antropologia et la Etnologia* was begun at Florence in 1871, and was later made the organ of the Società Italiana di Antropologia di Etnologia. There is an occasional paper in the *Bollettino della Società Geografica Italiana*, published at Rome.

In Spain the Sociedad Antropológica Española began at Madrid the publication of its *Revista de Antropologia* in 1875.

The session of the Congrès des Américanistes at Madrid in 1881 gave a new life in Spain to the study of American archæology and history, and out of this impulse there was begun a *Biblioteca de los Americanistas, publicala D. Justo Zaragoza ; Editor D. Luis Navarro ;* and the series has been begun with the *Recordacion florida, discurso del reino de Guatemala*, an hitherto unpublished work (1690) of Francisco Antonio de Fuentes y Guzmán, edited by Justo Zaragoza; and with the *Historia de Venezuela*, being a third edition of the work of José de Oviedo y Baños, edited by C. F. Duro.

The Museo Nacional in Mexico has grown to have a proper importance,[2] since the Mexican government has prevented the further exportation of archæological relics. It was founded in 1824 by Fathers Icaza and Gondra, but it owes its creation largely to the skill of Professor Gumesindo Mendoza, its curator, by whose death it lost much.[3] There is a tendency to draw to it other collections. There was a beginning made to publish illustrations of the relics in the museum sixty years ago, but it came to little,[4] and it was not until recently the publication of *Anales del Museo Nacional de Méjico* was begun that there seemed to be a proper effort made. The periodicals *Revista Mexicana* (1835), and *Museo Mexicano* (1843-45) have done something to illustrate the subject, — not to name others of less importance. The principal periodical source farther south, the *Registro Yucatéco*, only ran to four volumes, published at Merida in 1845–46.

The most conspicuous archæological repository in South America is that of the National Museum at Rio de Janeiro, whose published *Mémoires* contain important contributions to Brazilian Archæology.

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[1] Cf. Oscar Montelius, *Bibliographie de l'archéologie préhistorique de la Suède pendant le 19e siècle, suivie d'un exposé succinct des sociétés archéologiques suédoises* (Stockholm, 1875).

[2] It is described by Tylor in his *Anahuac*, ch. 9; by Brocklehurst in his *Mexico to-day*, ch. 21; by Bandelier in the *American Antiquarian* (1878), ii. 15; in Mayer's *Mexico;* and in the summary of information (fifteen years old, however) in Bancroft's *Mexico*, iv. 553, etc., with references, p. 565, which includes references to the Uhde collection at Heidelberg, the Christy collection in London (Tylor), that of the American Philosophical Society in Philadelphia (*Trans.*, iii. 570), not to name the Mexican sections of the large museums of America and Europe. Henry Phillips, Jr. (*Proc. Amer. Philosophical Soc.*, xxi. p. 111) gives a list of public collections of American Archæology. There are some private collections mentioned in the *Archives de la Soc. Amér. de France, Nouv. Ser.*, vol. i. A. de Longperier's *Notice des Monuments dans la Salle des Antiquités Américaines* (Paris, 1880) covers a part of the great Paris exhibition of that year. Something is found in E. T. Stevens's *Flint Chips, a guide to prehistoric archæology as illustrated in the Blackmore Museum* [at Salisbury, England], London, 1870.

[3] There is an account of Mendoza in the *Amer. Antiq. Soc. Proc.*, April, 1888, p. 172.

[4] *Coleccion de las Antigüedades Mexicanas que ecsisten en el Museo Nacional, litografiadas por Frederico Waldeck* (Mexico, 1827 — fol.); Sabin, iv. 15796. See miscellaneous references on Mexican relics in Bancroft's *Nat. Races*, iv. 565.

⁂ *The editor must be understood as approaching the purely archæological side of the study of Aboriginal America, as a student of the literature pertaining to it, rather than as a critic of phenomena. He has not proceeded even in this course without consultation with Professors Putnam, Haynes, and Brinton, with Mr. Lucien Carr and with Señor Icazbalceta.*

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